PLANS FOR IMPLEMENTING

THE COLUMBIA RIVER BASIN

FISH AND WILDLIFE PROGRAM

IN FISCAL YEAR 1986

BY

DIVISION OF FISH AND WILDLIFE
BONNEVILLE POWER ADMINISTRATION
PO BOX 3621
PORTLAND, OREGON 97208

October 1985

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WILDLIFE ACTION ITEMS

RESIDENT FISH ACTION ITEMS

PLANS FOR IMPLEMENTING THE COLUMBIA RIVER BASIN FISH AND WILDLIFE PROGRAM IN FISCAL YEAR 1986.

I. Purpose: The Fish and Wildlife Program (Program) is a large and complex effort to enhance, protect, and mitigate losses of those fish and wildlife which have been affected by the development, operation, and management of hydroelectric facilities in the Columbia River Basin. This Program was developed and adopted in November 1982 by the Northwest Power Planning Council (Council) as required by Public Law 96-501, the "Pacific Northwest Electric Power Planning and Conservation Act" (the Act). Bonneville Power Administration (BPA) modified its existing projects in fisheries and wildlife, and under the authority of the Act, began funding additional projects to implement the Program. Subsequently, the Council amended its Program in October 1984, in part, to include an Action Plan (Section 1500). which in effect identifies priorities for Program implementation.

BPA's implementation plan is intended to reflect the primary goals of the Program's Action Plan, i.e. provide a solid and focused basis for budgeting and planning. Additionally, BPA's implementation plan provides a means of judging the success of Program implementation. Finally, inclusion of work plans and major milestones will help acquaint concerned parties with BPA funded projects.

The implementation plan is neither intended to provide detailed analysis of the Program nor provide prospective views of future needs. These subjects will be developed in separate, periodic reports which have been requested in the Action Plan. As currently perceived, BPA will meet those needs by building upon relevant portions of this implementation plan.

This Plan has been organized and written to meet the specific needs of the Council's Action Plan, as described in Action Item 39.2. Material for inclusion was collected from various documents and sources, and was Limited whenever possible to bare essentials. However, if more detail is desired, additional information is on file in both the offices of the Council and BPA.

II. Content of the Implementation Plan:
The implementation plan is organized to address the action items assigned to BPA in Section 1500 of the Council's Fish and Wildlife Program (1984). These action items generally relate to one or more specific measures in the Program. The following information is listed for each project:

Budget Summary: All budgetary information was correct as of Oct. 1, 1985, and is subject to change without notice. If more than one project is listed under the action item, the budget is summarized for FY-86 and estimated for FY-87, 88, and 89 and may influence priorities. If an action item involves only one project, the budget information is not listed in this document. Individual project costs or cost estimates are not included in this document; BPA believes it is prudent to do this because these data tend to drive-up costs and hold-down competition.

Projects: Individual projects are listed by BPA project numbers such as 83-39; these numbers indicate the year that funding began (i.e., FY-83) and its assigned requisition number (i.e., 39) in the register (priority is not implied). New projects this year have an identification number which begins with 86- (for FY-86). Some action items are subdivided into distinctly different areas of concern such as by subbasins or disciplines.

Obligation Plan: The obligation plan covers the next four years beginning with FY-86 and indicates which years BPA intends to fund each project. The obligation plan lists whether BPA plans to obligate funds to support this project in a given fiscal year. Again, BPA will not list the amount which has been allocated, both to enhance cost control and to protect proprietary Financial information.

Work Plan and Milestones: This section contains the major components of each project's work plan and major milestone dates. Levels of detail and complexity vary between subjects and projects. Additional detail can be found in the project's work statement or the detailed program areas work plans, which are both on file in the offices of the Northwest Power Planning Council and BPA.

II. IMPLEMENTATION PLANS BY ACTION ITEMS

ACTION ITEM #

32.1 TEST AND EVALUATE AN ALTERNATIVE CONDUIT SYSTEM FOR JUVENILE FISH BY NOVEMBER 15, 1986. REPORT RESULTS TO THE COUNCIL BY JANUARY 1987. [SECTION 404(c)(3)1

A. Action Item Budget Summary: ($ X 1,000)

FY-86	FY-87	FY-88	FY-89
Restricted	Procurement	Information	

B. Projects: None

C. New Projects:

86-47 Evaluate and Test Alternate Bypass Conduit Designs; Project Manager, D. Johnson

Juvenile salmon and steelhead migrate downstream, past dams and are subjected to screening and bypass systems which inflict injury. Such injury is in part related to pressurized conduit bypass systems used at most dams. Based on past studies, an open flume system has potential for minimizing such injury. This project will design and test an alternate conduit system to assist in bypassing fish around dams. BPA will await the results of a similar Corps of Engineers study prior to implementation.

Obligation Plan:

FY-86 1/	FY-87	FY-88	FY-89
Yes	Yes	Yes	No

1/ "Yes" indicates that BPA plans to obligate funds to support this project in years so indicated.

"No" indicates no plan to obligate funds as above.

Work Plan and Milestones:

1. Begin: September 1985.

2. August 1985, evaluate the results from a similar study performed by the Army Corps of Engineers, Walla Walla District.

3. September - November 1585, assemble a technical workgourp to scope and determine additional research needs.

4. December, 1985 - June, 1986 develop procurement sol ic i tat ion and negotiate contract to perform study.

5. Begin design in 1986, construction in 1986 and early 1987 and test in spring of 1987 and report results to Council by Jan. 1987.

33.1 CONTINUE TO IMPLEMENT WATER BUDGET MEASURES, INCLUDING FUNDING OF WATER BUDGET MANAGERS AND TRIBAL COORDINATION EXPENSES. [SECTIONS 304(a)-(c).]

A. Action Item Budget Summary: ($ x 1,000)

FY-86	FY-87	FY-88	FY-89
190	200	200	200

B. Projects:

83-491 Water Budget Manager: Columbia Basin Tribes; 304(B)(l)
83-536 Water Budget Manager: Federal and State Fish and Wildlife Agencies; Project Manager, S. Smith

In an effort to reduce-juvenile salmon and steelhead passage mortality associated with reduced spring flows, the Columbia River Basin Fish and Wildlife Program promulgated the "Water Budget" concept for flow enhancement. Under this approach the fish and wildlife agencies and the Tribes are able to "shape" flows during the critical migration period, April 15 to June 15, using a block of water especially reserved for this purpose. To effectively use the Water Budget, two Water Budget manager positions were created, one to represent State and Federal fish and wildlife agencies, the other to represent Basin Indian tribes. Using data on fish movements supplied by several projects carried out under Action Item 33.2, the Water Budget managers request flows to afford the best possible conditions for fish passage.

Obligation Plan:

FY-86	FY-87	FY-88	FY-89	FY-90
Yes	Yes	Yes	Yes	Yes

Work Plan and Milestones:

1. Annual Report: November 1 of each year.

2. Annual research and monitoring plan: December 1 of each year.

33.2 CONTINUE TO FUND RESEARCH AND MONITORING. REPORT ON ACTIVITIES BY NOVEMBER OF EACH YEAR. [SECTION 304(d). I

A. Action Item Budget Summary: ($ x 1,000)

FY-86	FY-87	FY-88	FY-89
2,510	2,630	3,530	3,180

B. Projects:

80-l Smolt Monitoring Program - Project 304(d)(l & 2);
86-60 Downstream Migrant Monitoring - Project 304(d)(l &@); Project Manager, S. Smith

In order to most effectively use water reserved to aid fish migration and to properly time fish passage spills, the Water Budget managers (technical representatives of the region's fish and wildlife agencies and Indian tribes), the Corps of Engineers, Bonneville, the Mid-Columbia Public Utility Districts and other parties involved in providing adequate fish passage, must have information on fish movements and fish condition throughout the Columbia River Basin. This project, to be redefined in FY 1986 as project 86-60, provides a coordinative framework for collection of data on fish movements throughout the basin. The project also maintains a computer data base which stores these data and makes them available to all interested parties. As well as coordinating monitoring efforts and providing data storage, the project uses monitoring data to evaluate the success of flow and bypass projects aimed at increasing the survival of downstream migrants.

Obligation Plan:

FY-86	FY-8 7	FY-88	FY-89
Yes	Yes	Yes	Yes

Work Plan and Milestones:

1. Annual Report: February 1, 1586. This report includes evaluation of the success of 1985 downstream migration protection efforts.

2. Real time data are assembled and made available throughout the period of downstream migration (March-September).

83-323 Smolt Condition and Timing of Arrival at Lower Granite Reservoir - 304(d)(l & 2); Project Manager, T. Vogel

84-14 Smolt Monitoring at Federal Dams - Project 304(d)(l & 2); Project Manager, S. Smith

84-17 Fish Marking: Chinook and Steelhead at Idaho Hatcheries - Project 304(d)(l & 2); Project Manager, S. Smith

84-54 Juvenile Salmonid Monitoring at Rock Island Dam - Project 304(d)(l & 2); Project Manager, S. Smith

85-83 Hydroacoustic Monitoring at The Dalles and Lower Monumental Dams - Project 304(d)(l & 2); Project Manager, S. Smith

These projects provide fish tagging and field data collection needed to support Project 86-60. Some of the fish used in the analysis are tagged through Project 84-17. Field monitoring activities are carried out by Projects 84-14, using fish sampling techniques, and 85-83, through the use of hydroacoustics, at Federal dams. Project 83-323 monitors the movement of fish into the uppermost Snake River reservoir, Lower Granite, through the use of fish traps, while Project 84-54 monitors movement of fish through the mid-Columbia River reservoirs at Rock Island Dam.

Obligation Plan:

FY-86	FY-87	FY-88	FY-89
Yes	Yes	Yes	Yes

Work Plan and Milestones:

1. Annual summary of collected data supplied after the end of the 1985 downstream migration (October-December, 1985).

2. Real time data are provided throughout the period of downstream migration (March-September).

3. Project review and determination of need for continuation Project 83-323 to be held in September-October 1985.

85-35 Juvenile Radio Tag Studies 304(d)(2)E; Project Mananger, S. Smith

This project investigates a promising technique for evaluating the passage of juvenile fish at mainstem dams. If successful, the technique will allow evaluation of rates of passage through spillway, bypass and turbines as well as the level of mortality associated with each. The technique was tested at Lower Granite Dam in FY 1985. The results of that test will determine if further development is needed or if the technique is proven for use elsewhere in the system.

Obligation Plan:

FY-86	FY-87	FY-88	FY-89
Yes	Yes	Yes	Yes

Work Plan and Milestones:

1. Results of test at Lower Granite Dam will be used to determine the future course of this project by January, 1986.

81-1 Flow and Spill Requirements for Juvenile Fall and Summer Chinook Salmon in John Day Reservoir - Project 304(d)(1); Project Manager, T. Voge 1

Minimum instream summer flow recommendations and requests for summer fish flow have been made based on the assumption that the benefits of increased flows demonstrated for yearling spring chinook salmon and steelhead smolts apply equally to O-age (less than 1 year old) chinook salmon migrating during the summe. However, past research shows that even during high-f low years large numbers of juvenile summer and fall chinook salmon hold up for considerable periods of time in John Day reservoir. Under this project, the Natinal Marine Fisheries Service will relate instream flow and spill at John Day Dam to the passage time of summer and fall O-age chinook salmon in the John Day reservoir and determine how reservoir passage time affects survival.

Results from the juvenile phase of the project demonstrated that the majority of outmigrants (O-age chinook salmon) remained in the reservoir for protracted period of time. More importantly, no correlations could be established between the migration rate of the fish and the volume of water discharged through the reservoir. This means that the migration rate of outmigrants cannot be expediated by attempting to flush fish through the reservoir with any amount of water up to 380 kcfs, the maximal flow level which occurred during the study. Whether or not the migrational characteristics observed in John Day Reservoir exist in other impoundments in the Columbia River system is uncertain.

Obligation Plan:

FY-86	FY-8 7	FY-88	FY-89
Yes	No	No	No

Work Plan and Milestones:

1. Project began 1981; first phase dealing with juvenile fish migration completed in 1984.

2. Second phase of monitoring returns of adult fish will be completed in the fall of 1986.

3. Consideration for additional work to verify the results of this study will occur in FY-86.

82-3 Feeding Activity, Rate Consumption, Daily Ration, and Prey Selection of Major Predators in the John Day Reservoir - Measure 404(c)(l); Project Manager, F. Holm

The Columbia River mainstem reservoirs created by hydroelectric projects have greatly increased the number of predator fish and, therefore, the impact of predation on migrating juvenile salmon and steelhead. This project will determine the importance of each of three major predatory fish, squawfish, walleye, and smallmouth bass, to the overall problem. Combined with population estimates of each predator species, developed by Project 82-12, the location, timing, and resident fish species involved with predation on salmonids will be determined. This information will be combined with data on predator movements and habitats to develop mechanical and/or biological alternatives for control of predation by 1988. Successful control or mitigation techniques regarding predation could greatly increase the survival of downstream migrant salmonids.

Obligation Plan:

FY-86	FY-8 7	FY-88	FY-89
Yes	Yes	Yes	No

Work Plan and Milestones:

The project , in combination with Project 82-12, will continue to collect and analyze field data through FY-87. In FY-88 a plan for mechanical and/or biological alternatives for control of predation on salmonid smolts will be developed. Quarterly and annual reports are provided throughout the life of the project.

82-12 Abundance and Growth Cahracterist ics of Squawf ish and Wal leye in John Day Reservoir and Tailrace - Measure 404(c)(1); Project Manager, F. Holm

The Columbia River mainstem reservoirs created by hydroelectri projects have greatly increased the number of predator f ish and therefore the impact of predation on migrating juvenile salmon and steelhead. This project will estimate the populations of predators in the forebay, tailrace, and reservoir of John Day Dam. Combined with consumption estimates developed by Project 82-3, locations, timing, and resident fish species involved with predation on salmonids will be determined. This information will be combined with data on predator movements and habitats to develop mechanical and/or biological alternatives for control of predation by 1988. Successful control or mitigation techniques regarding predation could greatly increase the survival of downstream migrant salmonids.

Obligation Plan:

FY-86	FY-8 7	FY-88	FY-89
Yes	Yes	Yes	No

Work Plan and Milestones:

The project, in combination with Project 82-3, will continue to collect and analyze field data through FY-87. In FY-88 a plan tor mechanical and/or biological alternatives for control of predation on salmonid smotls will be developed. Quarterly and annual reports are provided throughout the life of the project.

c. New Projects:

86-48 Effect of Short Term Flow Fluctuations on Smolts - Proiect 304(d)(l); Project Manager, S. Smith

Short term flow fluctuations may have effects on the rate of migration of smolts. While no solid information to demostate such a relationship is now available, the level of concern among workers in this area justifies an investigation of the relationship between typical weekend-weekday flow fluctuations and the rate of smolt movement in comparison to uniform flow conditions. Methodology and potential contractor have not yet been determined.

Obligation Plan:

FY-86	FY-8 7	FY-88	FY-89
Yes	Yes	Yes	No

Work Plan and Milestones:

1. Study scheduled to begin during 1986 spring migration if adequate proposal is available.

34.1 COMPLETE CONSTRUCTION OF JUVENILE FISH PASSAGE FACILITIES AT ROZA DAM BY MARCH 1, 1986. COMPLETE CONSTRUCTION OF ADULT FACILITIES BY DECEMBER 1, 1986. [SECTION 904(d)(l).]

A. Action Item Budget Summary: ($ x 1,000)

FY-86	FY-87	FY-88	FY-89
Restricted Procurement Information			

B. Projects:

(Not BPA) Roza Dam Passage Facilities - 904(d)(l); Project Coordinator, T. Clune

U.S. Bureau of Reclamation has appropriated $4.8M in FY-85 to begin work, and will seek appropriations for completion.

Work Plan and Milestones:

	Item	Design	Start Constr.	Completion
1.	Screen Structure	12/84	10/85	3/87
2.	Screens & Mechanical	10/84	3/86	3/87
3.	Fish Handling/Pump Back Facilities	9/85	6/86	3/87
4.	Fish Ladder	6/85	6/86	3/87
5.	Wasteway Barrier	12/84	10/85	12/85

34.2 COMPLETE CONSTRUCTION OF JUVENILE FISH PASSAGE FACILITIES AT PROSSER DAM BY MARCH 1, 1986. COMPLETE CONSTRUCTION OF ADULT FACILITIES BY DECMEBER 1, 1986. [SECTION 904(d)(2).]

A. Action Item Budget Summary: ($ x 1,000)

FY-86	FY-87	FY-88	FY-89
Restricted Procurement Information			

B. Projects:

(Not BPA) Prosser Dam Passage Facilities - Project 904(d)(2); Project Coordinator, T. Clune

U.S. Bureau of Reclamation has appropriated $4.8M in FY-85 to begin work and will seek appropriations for completion.

Work Plan and Milestones:

	Item	Design	Start Constr.	Completion
1.	Screens and Structure	10/84	l/86	3/87
2.	Rt. Bank Ladder	10/84	9/85	l/86
3.	Left Ladder	6/85	6/86	11/86
4.	Center Ladder	5/85	5/86	11/86
5.	Rt. Bank Trap	4/85	5/85	9/86

34.3 COMPLETE CONSTRUCTION OF ALL YAKIMA RIVER FISH PASSAGE: IMPROVEMENTS LISTED IN TABLE 3 OF SECTION 904(d)(4) BY DECEMBER 1, 1987. PERFORM POST-CONSTRUCTION EVALUATIONS TO DETERMINE THE SUCCESS OF PASSAGE IMPROVEMENTS. [SECTION 904(d)(4).]

A. Action Item Budget Summary: ($ x 1,000)

FY-86	FY-87	FY-88	FY-89
5,440	1,000	0	0

B. Projects: Project Manager, T. Clune

A network of irrigation canals directs water from the Yakima and Naches Rivers for use by various agricultural interests in the Yakima River Basin of Central Washington. Juvenile salmon and steelhead often stray into these canals during their outmigration to the sea. USBR, BIA, and Washington State are constructing fish screens to direct the young salmon and steelhead back to the Yakima and Naches Rivers. The Yakima Project entities will fund the construction of fish ladders at various projects to facilitate the normal upstream migration of adult salmon and steelhead.

Obligation Plan:

FY-86	FY-87	FY-88	FY-89
Yes	Yes	Yes	No

Work Plan and Milestones:

Project/Item	Design Start Date	Const.1/ Start Date	Constr. Compl. Date
Horn Rapids - (84-56)			
1. Richland Screens & Struc.	June 84	Apr. 85	Sept. 85
Sunnyside - (84-55)			
1. Screens & Structure	June 84	Oct. 84	Mar. 85
2. Rt. Bank Ladder	July 84	Oct. 84	Mar. 85
3. Lft. & Ctr. Ladders	Nov. 84	Aug. 85	Dec. 85
Wapato - (84-57)			
1. W. Branch Ladder	July 84	Nov. 84	June 85
2. Screens & Structure	Oct. 84	Sep. 85	Mar. 86
3. E. Branch Ladders	Sep. 85	May 86	Nov. 86

Topp./Satus Unit - (84-58)			
1. Structure	Oct. 84	Sep. 85	Mar. 86
2. Screens		Aug. 85	Feb. 86
Status Creek - (86-88)	June 85	June 86	Feb. 87
Toppenish Creek - (86-89)	June 85	June 86	Feb. 87
Westside - (86-66)	Sep. 85	Oct. 86	Mar. 87
Wapato - (84-57)	Sep. 85	Oct. 86	Feb. 87
Old RS C/Wapato - (84-57)	July 86	July 87	Nov. 87
Marion Drain - (86-67)	July 86	July 87	Nov. 87
Stevens/Naches/Selah - (86-69)	July 86	June 87	Mar. 88
Snipes/Allen - (86-65)	Aug. 86	Sep. 87	Mar. 88

1/ Contract award date

34.4 DESIGN FISHWAY AND BYPASS FOR ELLENSBURG TOWN DIVERSION DAM BY OCTOBER 1987 AND COMPLETE CONSTRUCTION BY OCTOBER 1988. [SECTION 904(d)(5).]

A. Action Item Budget Summary: ($ x 1,000)

FY-86	FY-87	FY-88	FY-89
Restricted Procurement Information			

B. Projects:

87-47 Ellensburg Town Fish Screens Construction 904(d)(5) Project Manager, T. Clune

BPA will fund the construction of the Ellensburg Town fish screens to improve the outmigration of juvenile salmon and steelhead from the Yakima River system. BPA will not fund the proposed fish ladder because no fish ladder presently exists and the Ellensburg Water Company had a pre-Regional Act obligation to fund this.

Obligation Plan:

FY-86	FY-87	FY-88	FY-89
No	Yes	Yes	NO

Work Plan and Milestones:

Begin design October 1986, complete construction by March 1988.

85-53 Dryden Dam Fish Passage 704(d)(l); Project Manager, T. Clune

The existing adult fish passage facilities at Dryden Dam do not adequately pass salmon and steelhead under Low flow situations. BPA will replace the existing fishways with a vertical slot design to improve fish passage during low flows.

Obligation Plan:

FY-86	FY-87	FY-88	FY-89
Yes	Yes	NO	NO

Work Plan and Milestones:

1. Begin preliminary design September 1985.

2. Begin design February 1986.

3. Begin construction July 1986, complete December 1986.

4. Begin evaluation January 1987, complete December 1987.

34.5 DEVELOP AN ANNUAL WORK PLAN FOR SUBMISSION TO THE COUNCIL BY SEPTEMBER 15 OF EACH FISCAL YEAR FOR IMPLEMENTATION OF SECTION 704(d). PREPARE AND SUBMIT, TO THE COUNCIL, AN ANNUAL REPORT ON ACTIVITIES IN OCTOBER.

A. Action Item Budget Summary: ($ x 1,000)

FY-86	FY-87	FY-88	FY-89
9,099	11,123	8,370	3,170

B. Projects:

The following table, **Status** Report Habitat and Passage Enhancement, summarizes information pertaining to habitat and passage projects implemented by BPA's Division of Fish and Wildlife under Program Measure 704(d)(l). This report is organized into three sections: I. Research Projects; II. Evaluation Projects; and III. Habitat and Passage Enhancement Projects. Projects presented in Section III are organized by subbasin, beginning with the Willamette/Clackamas River subbasin and working upriver to the Salmon River subbasin.

A more detailed discussion of habitat and passage project activities, FY 1986 implementation, and the evaluation and monitoring process, is included in the FY 1986 Work Plan Habitat and Passage Enhancement. The habitat and passage work plan is included as Appendix C of this Implementation Plan.

BPA Responses to Issues Raised by the
Columbia Basin Fish and Wildlife Council
in LETTER NO. 16

Letter No. 16, Issues No. 1 and 2

See Comments on Letter No. 4, Issue No. 43 (PNUCC).

While it is beyond the deadline for comments, we believe it is essential to reconsider the funding needs for the sturgeon work. The agencies believe this is an extremely high priority item since the sturgeon resource has high recreational and commercial value in the region and virtually nothing has been done to date to redress hydroelectric impacts.

CBFWC staff would be pleased to meet with you and members of your staff to discuss this issue.

Sincerely,

John R. Donaldson, PhD
Chairman

lkw
c USFWS
NMFS
WDF
NPPC

LETTER NO 17

JACK S WAYLAND
Director

STATE OF WASHINGTON

DEPARTMENT OF GAME

600 North Capitol Way, GI-H . Olympia, Washington 98504-0091 • (206)753-5700

October 9, 1985

TO: Jerry Bouck

FROM: Jack Howerton, Power Planning Coordinator

RE: Approach to Disease Studies

I have discussed the approach outlined in our telecon of October 4, 1985 regarding disease studies with Jim Gearheard of our department. We agree that the states have, in most cases, the technology, facilities, and expertise to conduct disease studies. The most economical way to do these studies may well be to expand the states' capabilities to conduct them.

Our department does not have the facilities to deal with IHN, and BKD is not a serious problem in steelhead. We are concerned primarily with Ceratomyxa and with eye fluke. Ceratomyxa is a problem in some of our Columbia River hatcheries, and eye fluke is an affliction of wild fish in the basin. Additional funding would allow us to concentrate more effort on these diseases. Department of Fisheries has, we understand, the facilities to handle work on IHN and BKD.

We support expanding the state's capabilities to do the additional work involved in the conduct of disease studies under the Program.

JH:cv

Issues)

(1)

BPA Responses to Issues Raised by the
State of Washington, Department of Game
in LETTER NO. 17

Letter No. 17, Issue No. 1

BPA notes the concern for eye fluke and C. Shasta, and appreciates the support for its approach to fish health monitoring.

JBouck:tlh:S213 (WP-PJS-673SN)

STATUS REPORT
704(d)(1) Habitat Improvement and Passage Enhancement

PROGRAM MEASURE	PROJECT NUMBER	PM[1]	TITLE	PROJECT STATUS	CONTRACT TERM START DATE	CONTRACT TERM RENEWAL DATE
I. RESEARCH PROJECTS						
704(d)(1) Table 2	82-1	TSV	Inventory of Nez Perce Reservation Streams - Nez Perce Tribe	Final report on the physical habitat inventory due 5/15/85. Biological inventory to be completed by 1/31/86.	1/12/82	11/1/84
	83-373	DEJ	Deschutes River Spawning Gravel Study - Consultant/ODFW	Project completed.	A-7/27/83 B-9/1/83	- -
	81-108	JCG	Warm Springs Reservation Baseline Fishery Inventory - Warm Springs Tribe	Phase I completed in FY 1982. Phase II, baseline data collection, to be completed by FY 1990. Phase III, implementation of protection and enhancement activities, to be completed by FY 1992. Phase II and III are consecutive, ongoing projects.	9/30/81	10/1/85
	82-14	TSV	Development of New Concepts in Fish Ladder Design - WSU	Project completed.	6/4/82	-
II. EVALUATION AND MONITORING PROJECTS						
	82-9	LBE	John Day River Habitat Improvement Evaluation - ODFW	Project terminated on 8/30/84. ODFW is preparing a statewide monitoring proposal.	6/4/82	-
	83-7		Evaluation of Idaho Habitat Improvement Project - IDFG	FY 1984 annual report completed and distributed. FY 1985 field sampling	8/15/83	3/31/86
	85-61		Habitat Evaluation and Monitoring/ Oregon - Consultant	Work statement and proposal request being developed.	11/1/85	10/31/86
	85-62		Habitat Evaluation and Monitoring/ Columbia Basin - Consultant	Work statement and procurement document being developed.	11/1/85	10/31/86
	84-11	KJA	Clackamas/Hood River Habitat Enhancement Program - Mt Hood National Forest (NF)		4/1/84	3/31/86
			Fish Creek Evaluation	Evaluation in progress.		

1/ PM = Project Manager: KJA/K. Anderson, TJC/T. Clune, LBE/L. Everson, JCG/J. Gislason, DEJ/D. Johnson, TSV/T. Vogel

STATUS REPORT
704(d)(1) Habitat Improvement and Passage Enhancement

PROGRAM MEASURE	PROJECT NUMBER	PM 1/	TITLE	PROJECT STATUS	CONTRACT TERM START DATE	CONTRACT TERM RENEWAL DATE
III. PASSAGE AND HABITAT IMPROVEMENT						
Willamette River/Clackamas River Subbasin						
704(d)(1) Table 2	84-11	KJA	Clackamas/Hood River Habitat Enhancement - Mt. Hood NF		4/1/84	3/31/86
			Collawash Rivers Falls Passage Feasibility	FY 1985 activities include analysis of the engineering feasibility and economic efficiency for each passage option. The preferred design option will be selected and schedule implemented.		
			Collawash River Drainage Habitat Improvement; Hot Springs Fork Subdrainages	Instream activities will include passage improvements at three falls on Nohorn Creek and installation of structures to develop and deepen pools in Pansy Creek.		
			Lake Branch Improvement	FY 1985 construction activities will include installation of 15 berm structures in lower Lake Branch and development of two side channels in McGee Creek.		
			Fish/Wash Creek Habitat Improvement	FY 1985 construction activities will include development of side channel and and excavate ponds (alcoves) for rearing and overwintering habitat.		
			Lower Oak Grove Fork Habitat Improvement	FY 1985 construction activities will include construction of 20 boulder berms and improvement of rearing habitat in two side channels.		
			Fifteenmile Creek Basin Habitat Improvement	Construction anticipated to begin in 1985.		
	85-79		Fifteenmile Creek Basin Habitat Improvement - ODFW	Work statement under development. Plan/ design phase anticipated to occur in FY 1986.		
	84-26 (86-90)		Little Fall Creek Fish Passage - Consultant	Contract under development. Project scheduled to begin in summer 1986.		
Hood River Subbasin						
	83-341	DEJ	West Fork Hood River Passage - ODFW	Completion anticipated 12/31/85.	4/1/83	12/31/85

1/ PM = Project Manager: KJA/K. Anderson, TJC/T. Clune, LBE/L. Everson, JCG/J. Gislason, DEJ/D. Johnson, TSV/T. Vogel

STATUS REPORT
704(d)(1) Habitat Improvement and Passage Enhancement

PROGRAM MEASURE	PROJECT NUMBER	PM[1]	TITLE	PROJECT STATUS	CONTRACT TERM START DATE	CONTRACT TERM RENEWAL DATE
Deschutes River Subbasin						
704(d)(1) Table 2	83-423	DEJ	Trout Creek Riparian Enhancement - NBC	Project construction scheduled to begin in FY 1986.	9/27/83	9/30/85
	84-7		Coordination of Trout Creek Riparian Enhancement - SCS	Conducted in conjunction with the Trout Creek Riparian Enhancement Project.	3/1/84	12/31/85
	84-62		Coordination of Trout Creek Riparian Enhancement - ODFW	Conducted in conjunction with the Trout Creek Riparian Enhancement Project.	9/1/84	12/31/85
	83-440a 83-440b 83-450	LBE	White River Falls Passage - USFS ODFW Consultant	Project on hold pending outcome of ODFW Commission decision. BPA funding has been deferred.	4/20/83 4/1/83 7/25/83	3/31/84 3/31/85 3/31/86
John Day River Subbasin						
	84-8		N. Fork John Day River Habitat Enhancement - USFS/Umatilla Forest	Plan and design phase in progress. (Previously Projects 83-394 and 83-395)	4/1/85	3/31/86
			Desolation Creek	Plan and design phase in progress. Construction contracts will be prepared and executed in 1986.		
			North Fork John Day River Habitat Improvement	Project construction is in progress. Instream structures will be constructed to stabilize streamflow in 12 side channels		
			Clear/Granite Creeks (N. Fork John Day River)	Projects completed in FY 1982, 1983, and 1984.		
	84-21		Mainstem, Middle Fork/John Day River - ODFW		6/30/85	3/31/86
			Mainstem John Day River	Plan and design phase in progress.		
			Middle Fork John Day River	Plan and design phase in progress.		
			North Fork John Day River	Plan and design phase in progress.		
	84-22		Mainstem and Upper John Day River - USFS/Malheur Forest		6/29/84	3/31/86
			Upper Mainstem John Day River Habitat Improvement	Instream structures will be installed along 3 mi of stream.		

STATUS REPORT
704(d)(1) Habitat Improvement and Passage Enhancement

PROGRAM MEASURE	PROJECT NUMBER	PM 1/	TITLE	PROJECT STATUS	CONTRACT TERM START DATE	CONTRACT TERM RENEWAL DATE
704(d)(1) Table 2	84-72	TBE	Mainstem and Upper John Day River con't			
			Middle Fork John Day River and Tribs		6/29/84	3/31/86
			Big Boulder Creek	Complete Phase I, plan and design. Stream surveys of the Middle Fork and selected tributaries, and NEPA activities will be completed.		
			Granite Boulder Creek	Complete Phase I, plan and design. Stream surveys of the Middle Fork and selected tributaries and NEPA activities will be completed.		
			East Fork Beech Creek	Project completed.		
			Canyon Creek	Project completed.		
	84-84		Murderers/Deer Creek Fish Habitat	Murderers Creek Project completed on USFS land in FY 1984. Deer Creek scheduled for completion on BLM land in 1985.	4/1/84	1/31/85
	84-473		Cottonwood Creek Habitat Improvment - BLM	Project completed.	7/25/83	-
	85-71	KJA	South Fork John Day River Habitat Enhancement/Izee Falls Fish Passage - BLM	Construction activities to begin on the S. Fork in 1985. Work statement and procurement for Izee Falls Project will be developed in FY 1986.	9/1/85	3/31/86
Umatilla River Subbasin						
	84-10	TSV	Plan for Restoring Salmon and Steelhead in the Umatilla River - ODFW	Project completed.	7/15/84	-
	83-434		Umatilla River Channel Study - USACE	Project completed	2/1/84	-
	85-436		Three Mile Dam Passage Study - BOR	Provide final designs, specifications, and construction cost estimates for fish passage facility.	5/1/84	9/30/87
	83-834, 85-16,86-56		Lower Umatilla River Channel Modifications below Three Mile Dam - ODFW	Post-construction evaluations and additional modifications to be completed	9/15/84	9/1/86
Grande Ronde River Subbasin						
	84-9	KJA	Grande Ronde Habitat Improvement Project - USFS/Wallowa-Whitman NF		7/1/84	6/30/86
			UPPER GRANDE RONDE BASIN			
			Habitat Inventory and Determination of Potential	Anadromous fish streams will be inventoried. Completion scheduled for 9/30/85.		

1/ PM - Project Manager: KJA/K. Anderson, TJC/T. Clune, TBE/L. Everson, JCG/J. Gislason, DEJ/D. Johnson, TSV/T. Vogel

STATUS REPORT
704(d)(1) Habitat Improvement and Passage Enhancement

PROGRAM MEASURE	PROJECT NUMBER	PM[1]	TITLE	PROJECT STATUS	CONTRACT TERM START DATE	CONTRACT TERM RENEWAL DATE
704(d)(1) Table 2	84-9	KJA	UPPER GRANDE RONDE BASIN con't		7/1/84	6/30/86
			Implementation Design	Plan and design phase is scheduled for completion 12/1/85.		
			JOSEPH CREEK SUBBASIN			
			Habitat Inventory and Determination of Potential	Project in progress. Approximately 2.3 mi of creek will be planted to stream shade vegetation. Approimately 2.9 mi of stream (5.8 total) will be fenced.		
			Implementation Design	Plan and design phase is scheduled for completion 12/1/85.		
			Elk Creek	Planting of 2.3 mi of creek was completed in May 1985. Fencing scheduled for completion 9/30/85.		
			JOSEPH CREEK SUBBASIN			
			Swamp Creek	Planting of 2 mi of creek is scheduled for completion in May 1986.		
			Chesnimnus Creek	Planting to be conducted in May 1987 and 1988.		
			Sheep Creek	Planting of 2.06 mi of stream is scheduled for completion in June 1986 and construction of structures in September 1985.		
	84-25		Grande Ronde Habitat Improvement Project - ODFW		7/1/84	6/31/86
			Upper Grande Ronde Subbasin (Sheep and Fly creeks and the Mainstem Grande Ronde River)	Phase 1, plan and design, is in progress.		
			Joseph Creek Planning (Swamp, Chesnimnus, Crow, Pine, and Butte creeks)	Phase 1, plan and design, is in progress.		
			Elk Creek	Fencing and installation of instream structures is in progress.		
	83-492	LBE	Peavine Creek Spawning Habitat - USFS/Wallowa-Whitman NF	Project completed.	9/15/83	-

STATUS REPORT
704(d)(1) Habitat Improvement and Passage Enhancement

PROGRAM MEASURE	PROJECT NUMBER	PM[1]	TITLE	PROJECT STATUS	CONTRACT TERM START DATE	CONTRACT TERM RENEWAL DATE
Similkameen River Subbasin						
704(d)(1) Table 2	83-477	LBE	Enloe Dam Passage - Consultant	Phase III, engineering design of passage alternatives and NEPA compliance are in progress. Fisheries plan and benefit analysis are completed. Agency actions required for final passage alternative and construction.	4/25/83	12/31/85
Wenatchee River Subbasin						
	83-446 85-52 85-53	TJC	Tumwater/Dryden Passage - Consultant	Phase I, engineering feasibility study, was completed in FY 1984. NEPA scheduled for 1985.	6/8/83	9/30/84
Yakima River Subbasin						
	86-75	JCG	Little Naches River Passage USFS/Wenatchee NF	Phase I, preliminary engineering design of passage facility, and channel rehabilitation planning and implementation are in progress.	10/1/85	12/31/86
Clearwater River Subbasin						
	84-31	LBE	Clearwater Basin Agreement, Habitat Improvement - USFS/Clearwater		9/84	9/31/86
			South Fork Clearwater River	Habitat inventories, feasibility studies, and design of enhancement measures will be conducted. Projects being developed for BPA/USFS cost sharing.		
			Habitat Enhancement for Clearwater Lochsa River Tributaries	Project plan and design phase is in progress. Habitat inventories will be conducted on 50 mi of stream. Projects being developed for BPA/USFS cost sharing.		
	84-5		South Fork Clearwater River - USFS		1/1/84	12/31/86
			Red River	Construction activities are in progress.		
			Crooked River	Instream structures and off-site pond construction will continue into FY 1985.		
	84-6		Clearwater River Habitat Enhancement Improvements - USFS Clearwater NF		4/1/84	3/31/86
			Lolo Creek	Project to be completed in 1985.		
			Eldorado Creek	Project to be completed in 1985.		
			Crooked Fork	Project to be completed in 1985.		

1/ PM Project Manager: KJA/K. Anderson, TJC/T. Clune, LBE/L. Everson, JCG/J. Grislason, DEJ/D. Johnson, TSV/T. Vogel

STATUS REPORT
704(d)(1) Habitat Improvement and Passage Enhancement

PROGRAM MEASURE	PROJECT NUMBER	PM[1]	TITLE	PROJECT STATUS	CONTRACT TERM START DATE	CONTRACT TERM RENEWAL DATE
Salmon River Subbasin						
	86-76	JCG	Orofino Creek Passage - Consultant	Work statement and procurement under development.	1/1/86	3/31/87
704(d)(1) Table 2	83-7	LBE	Idaho Habitat Projects - IDFG		8/15/83	3/31/86
			Boulder Creek Passage	Project completed.		
			South Fork Salmon River Passage	Planning completed in FY 84. NEPA in progress. Implementation dependent upon sedimentation status in the South Fork Salmon River.		
	83-416	DEJ	Pole Creek Irrigation Diversion Screening - USFS/Sawtooth NF	Project completed.	4/1/83	-
	83-23	LBE	Camas Creek, Idaho - USFS Salmon NF	Phase I, plan/design, began in FY 1984 and continuing in 1985.	6/29/84	3/31/86
	83-359		Salmon River Habitat Enhancement - Shoshone/Bannock Tribe		10/1/83	6/30/86
			Bear Valley Creek Habitat Improvement	Phase II, feasibility study, is in progress. Implementation scheduled to start in FY 85.		
			Yankee Fork/Jordan Creek/East Fork Salmon River	Phase III, stream inventory, in progress.		
	83-415		Alturus Lake Creek and Upper Salmon R. Flow Augmentation - USFS/Sawtooth NF	Preferred alternative has been selected Constructed is scheduled for FY 1986/1987.	4/1/83	12/31/86
	84-24		Marsh/Elk/Valley/Upper Salmon River, Idaho - USFS Region 4	Phase I, inventory and project descriptions, is in progress. Cost sharing agreement with USFS required for implementation in FY 1986.	6/29/84	3/31/88
	84-28		Lemhi River Rehabilitation-Consultant	Phase I, engineering feasibility study and fisheries evaluation, will occur in 1984-1985. Completion of feasibility study scheduled for December 1985.	9/84	12/31/85
	84-29		Panther Creek - Consultant	Phase I, engineering and feasibility study, will occur in 1984-1985. Selection of preferred alternative will occur in FY 1986. Construction planned for FY 1986-1988.	8/27/84	9/15/85

KAnderson:ka(WP-PJS-6789N)

34.11 OPERATE AND MAINTAIN JUVENILE RELEASE AND ADULT COLLECTION AND HOLDING FACILITIES ON THE UMATILLA RESERVATION. [SECTION 704(i)(l).]

A. Action Item Budget Summary: ($ x 1,000)

FY-86	FY-87	FY-88	FY-89
Yes	Yes	Yes	Yes

B. Projects:

83-435 Minthorn Springs Creek Summer Steelhead Juvenile Release and Adult Collection Facility - 704(i)(l); Project Manager, T. Vogel

The objective of this project is to construct facilities on Minthorn Springs Creek, a tributary to the Umatilla River, capable of holding 150,000 summer steelhead smolts at 10 per pound for the purpose of acclimation, imprinting, and develop adequate collection and holding facilities to accomodate approximately 250 steelhead adults. Construction of this facility is anticipated to be completed by October 15, 1985. The Bonifer Springs Facility was constructed under BPA Project 82-18 and was completed in 1983.

A limited evaluation is in progress of the Bonifer facility in terms of increasing survival of smolts (as measured by returning adults) by acclimation. The evaluation also includes assessment of the facility operation and development of actual costs for operation and maintenance. The evaluation of the facility in terms of increasing survival is limited due to a lack of an adequate number of smolts. The evaluation will be expanded as additional smolts become available. The Minthorn Springs facility will be evaluated in a similar manner.

Obligation Plan:

FY-86	FY-87	FY-88	FY-89
Yes	Yes	Yes	Yes

Work Plan and Milestones:

1. Operation and maintenance of the Bonifer Springs Facility is being provided for through a continuation of the Intergovernmental Agreement for construction. This agreement is between Bonneville Power Administration and the Confederated Tribes of the Umatilla Indian Reservation. This agreement will be renegotiated prior to July 1, 1986 and will continue ongoing facility evaluations.

2. Operation and maintenance of the Minthorn Springs facility is planned to be provided through a continuation of the construction agreement. This agreement will be negotiated prior to July 1, 1986 and will include the scope of work for facility evaluations.

34.12 SUBMIT SITING, FEASIBILITY, DESIGN, AND PRELIMINARY DESIGN FOR A UMATILLA STEELHEAD HATCHERY TO THE COUNCIL BY JULY 1986. UPON COUNCIL APPROVAL, FUND CONSTRUCTION OF EXPANSION. [SECTION 704(i)(l).].

A. Action Item Budget Summary: ($ x 1,000)

FY-86	FY-87	FY-88	FY-89
Restricted Procurement Information			

B. Projects:

84-33 Umatilla River Summer Steelhead Hatchery - (704(i)(l)); Project Manager, T. Vogel

The initial stage of this project involves pre-design studies for a hatchery to produce 200,000 summer steelhead juveniles for annual release into the Umatilla River. The hatchery will increase steelhead runs in the Umatilla River to mitigate fish losses resulting from the impacts of mainstem Columbia River hydroelectric facilities. Estimates of the potential benefits through increased return of adults from hatchery releases have been determined in a separate project (BPA Project No. 84-10).

Initial work was begun July 1, 1984 under an Intergovernmental Agreement with the Oregon Department of Fish and Wildlife. This work included identification of potential hatchery sites, (including existing facilities), and the'selection of the most suitable site(s). This work was completed with the submission of the Phase I completion report dated February 27, 1985.

BPA began an investigation into land acquisition of the preferred sites during January, 1985. At this time, it appears an 18 acre parcel of Army Corps of Engineers' property, leased to the Tidewater Barge Company, most adequately meets the needs for construction of a facility to produce 200,000 summer steelhead smolts.

Obligation Plan:

FY-86	FY-8 7	FY-88	FY-89
Yes	Yes	Yes	Yes

Work Plan and Milestones:

1. Work began, July 1, 1984; siting study completed March 1985; preferred site for land acquisition identified August 1985.

2. Site acquisition is expected during FY-86.

3. Feasibility and pre-design studies will begin in FY-86 and are scheduled for completion in late FY-86.

4. NEPA activities will begin in FY-86.

5. Final designs are scheduled to be prepared during FY-87.

6. Construction is presently planned to begin in FY-88.

34.13 JOHN DAY ACCLIMATION FACILITY: COMPLETE CONSTRUCTION OF TEMPORARY FACILITIES [PLAN BY AGENCIES AND TRIBES] BY SPRING 1986. [SECTION 704(i)(2). 1

A. Action Item Budget Summary: ($ x 1,000)

FY-86	FY-8 7	EY-88	FY-89
Restricted Procurement Information			

B. Projects:

86-82 John Day Dam Acclimation Pond - 704(i)(2); Project Manager, R. Morinaka

BPA will fund pre-design studies for an acclimation pond for juvenile fall chinook and an adult fall chinook collection facility to be constructed above John Day Dam. Presently, juvenile salmon are being transported from the COE's John Day mitigation production at Spring Creek and Bonneville hatcheries for release above John Day Dam, in an effort to increase adult returns to the John Day Pool and above. Transportation stress and the shock of sudden release into the natural environment can cause high mortality among juvenile fish. Holding juveniles in an acclimation facility is expected to reduce mortality related to transportation.

Obligation Plan:

FY-86	FY-8 7	FY-88	FY-89
Yes	Yes	Yes	Yes

Work Plan and Milestones:

1. Complete phase I 'site study' on or about June 1986.
2. Submit the recommendations for sites to the Council July, 1986.
3. Initiate predesign September, 1986.
   a. Select sites and determine level of technology at each site.
   b. Initiate EA for NEPA compliance if necessary .
4. Complete final design October, 1987.
5. Construct facilities March, 1988 - October, 1988.
6. Fund the evaluation of these facilities.

34.14 YAKIMA HATCHERY: FUND DESIGN BEGINNING IN FY 1986. [SECTION 704(i)(3)]; AND FUND CONSTRUCTION OF HATCHERY AND ASSOCIATED FACILIITES UPON COMPLETION OF DESIGN. [SECTIoN 704(i)(3).]

A. Action Item Budget Summary: ($ x 1,000)

FY-86	FY-87	FY-88	FY-89
Restricted Procurement Information			

B. Project:

86-45 Construction of the Yakima Outplanting Facility and Fund Operation and Maintenance - 704(i)(3); Project Manager, T. Clune

BPA will fund the design, construction, operation and maintenance of the Yakima outplanting facility upon the development and Council approval of a hatchery masterplan. The facility will enhance the fishery for the Yakima Indian Nation and other harvesters. The purpose of the hatchery will be to supplement natural runs by the artificial production of salmon and steelhead.

Obligation Plan:

FY-86	FY-87	FY-88	FY-89
Yes	Yes	Yes	Yes

Work Plan and Milestones:

Council to develop a masterplan beginning in FY-85. BPA will fund design in FY-86 and construction upon the completion of design. Operation and maintenance scheduled to begin in FY-89.

34.15 COMPLETE HATCHERY SURVEY AND REPORT TO THE COUNCIL BY OCTOBER 1985. [SECTION 704(f)1).]

A. Action Item Budget Summary: ($ x 1,000)

FY-86	FY-8 7	EY-88	FY-89
Restricted Procurement Information			

B. Projects:

84-51 Survey of Artificial Production Facilities in the Columbia Basin 704(f); Project Manager, R. Morinaka

Artificially produced salmonids contribute significantly to the Columbia Basin Fisheries resource. This study is to survey more than 75 public artificial production facilities in the Columbia Basin. Information collected from this survey will be utilized to estimate total production of these facilities and their potential for additional production. Limiting factors and needs to realize expanded production will be identified.

Obligation Plan:

FY-86	FY-8 7	FY-88	FY-89
No	No	No	No

Work Plan and Milestones:

1. Completion is scheduled for October 1985.

34.16 REPORT ON THE STATUS OF STUDIES TO DEVELOP LOW CAPITAL PRODUCTION FACILITIES BY JULY 1985. FUND NO MORE STUDIES UNDER THIS MEASURE PRIOR TO REPORT. [SECTION 704(j)(l).]

A. Action Item Budget Summary: ($ x 1,000)

FY-86	FY-87	FY-88	FY-89
450	400	210	150

B. Projects:

83-364 Evaluation of a Low-Cost Salmon Production Facility 704(i)(l); Project Manager, T. Clune

An evaluation of the effectiveness of a low-cost salmon production facility and known-stock terminal fishery. The evaluation looks at the use of smaller water supplies, conservation of gene pools, and the benefits of community in valuement in the known-stock fishery program.

Obligation Plan:

FY-86	FY-87	FY-88	FY-89
Yes	Yes	No	No

Work Plan and Milestones:

1. Evaluate project through coded-wire tag recoveries and community involvement.

2. Completion is scheduled for FY-87.

83-313 Pen Rearing Study of Fall Chinook Salmon 704(J)(2); Project Manager, R. Morinaka

This study is researching the feasibility and cost/benefits of rearing fish in portable/temporary structures in back waters in the Columbia River. The technology tested will prove it's applicability for use in other program measures 704(K)(l), 704(g)(l) & (2). and 704(h).

Obligation Plan:

FY-86	FY-87	FY-88	FY-89
Yes	Yes	Yes	Yes

Work Plan and Milestones::

1. Complete rearing and releasing test fish on or about 1987.

2. Compile adult contribution to the fishery.

3. Complete write-up and analysis on or about 1990.

C. New Projects

86-83 Status Report on Low Capital Production Facilities in the Columbia Basin; Project Manager, R. Morinaka.

86-83 has been deferred until a better definition is provided on what a low capital facility is.

34.17 DESIGN LOW CAPITAL PRODUCTION FACILITY ON THE NEZ PERCE RESERVATION AND INITIATE CONSTRUCTION BY MAY 1985. [SECTION 704(j)(2).]

A. Action Item Budget Summary: ($ x 1,000)

FY-86	FY-8 7	FY-88	FY-89
Restricted Procurement Information			

B. Projects:

83-350 Low Capital, Low-Technology Fisheries Facilities for the Enhancement of Anadromous Salmonid Stocks on the Nez Perce Reservation - (704(j)(2); Project Manager, T. Vogel

Through construction of facilities for spawning, incubation, and rearing of chinook salmon and steelhead, the Nez Perce Tribe seeks to re-establish its salmon and steelhead fishery. This fishery has been nearly destroyed through construction and operation of dams and poor land-use practices including agriculture, logging, road construction, and mining. Work began on this project in September, 1983 with the signing of an Intergovernmental Agreement between BPA and the Nez Perce Tribe.

The initial phase of the project had the following objectives:

1. Identify, evaluate, and rate alternative sites for low technology artificial propagation, rearing, acclimation, and adult capture and juvenile release facilities on the Nez Perce Reservation and ceded lands for spring chinook, fall chinook, coho, and steelhead.

2. Develop an integrated, low technology artificial propagation conceptual plan based upon the selected sites and anadromous fish production goals.

3. Perform the preliminary design, cost estimates, and construction schedule for the recommended fish facilities.

4. Develop cooperative Tribal/Idaho Department of Fish and Game strategies for egg supply, rearing, outplanting, adult capture, and fisheries stock management.

Obligation Plan:

FY-86	FY-8 7	FY-88	FY-89
Yes	Yes	Yes	Yes

Work Plan and Milestones:

1. BPA received a draft Preliminary Design Report in January, 1985 that addressed objectives 1 and 2 and, in part, objective 3 of the initial phase of the project. This report was subsequently finalized by the Nez Perce Tribe and distributed by BPA for review and comment. Objective 4 remains to be accomplished.

2. Comments received by BPA on the Preliminary Design Report identified three areas of major concern and several more minor issues. The three major issues needing resolution are (1) need for a detailed management plan that is agreed upon by the appropriate management entities; (2) adequacy of water quality and quantity for facility operations; and (3) consistency of the designs with the concept of low-capital and low-technology fish production facilities.

3. Meetings will be scheduled for late FY-85 and early FY-86 to try and resolve the major issues identified above.

4. If the major issues are resolved, BPA will move forward on resolving the more minor concerns through a continuation of feasibility and design studies that might allow the project to move to construction.

5. NEPA activities began during FY-85 with the issuance of a RFP for an environmental assessment. A contractor has been selected and a contract issued. Actual work will begin as soon as the major issues are resolved.

34.18 FUND THE HABITAT SURVEY ASSOCIATED WITH ACTION ITEM 34.17. ISECTION 704(e)(l).)

A. Action Item Budget Summary: ($ x 1,000)

FY-86	FY-8 7	FY-88	FY-89
Restricted Procurement Information			

B. Projects:

86-77 [Formerly - 85-491 Assessment of the Mainstem Clearwater River as Habitat for Anadromous Salmonids Measure 704(e)(l); Project Manager, J. Gislason

When constructed, a low-capital salmon and steelhead hatchery on the Nez Perce Reservation will produce fish for outplanting in reservation streams. The mainstem Clearwater River habitat study will attempt to evaluate the existing habitat and temperature regimes for spawning, rearing, and incubation for salmon and steelhead in the lower Clearwater River. The study will also attempt to determine what species can be successfully outplanted in the mainstem river and how many fish should be outplanted to fully utilize the mainstem's production potential. As stated in the Nez Perce Tribe's study proposal dated June 7, 1985, the study would have the following objectives:

1. Determine the enhancement potential of the mainstem Clearwater River for juvenile spring chinook and steelhead and spawning and incubation of fall chinook by: a) quantifying the physical habitat in the mainstem Clearwater River suitable for the target species, b) determining the quality of habitat identified in (a), and c) estimating current utilization of available habitat by anadromous salmonids.

2. Develop a mainstem Clearwater River enhancement strategy to maximize fish production.

Obligation Plan:

FY-86	FY-8 7	EY-88	FY-89
Yes	Yes	Yes	No

Work Plan and Milestones:

1. BPA is considering the Nez Perce Tribe as a sole-source contractor for the project, and the Tribe submitted a revised study proposal to BPA on June 7, 1985.

2. On June 26, 1985, BPA sent the Tribe's proposal to the Idaho Department of Fish and Came, the U.S. Fish and Wildlife Service, and the Corps of Engineers for formal review and comments, as part of the consultation and coordination required by Program Measure 1304(c)(2),. Comments were received by August 28. The agency review pointed out major technical problems in the proposal.

3. In an attempt to resolve the issues related to the Tribes study proposal, BPA has asked to consult with the Nez Perce Tribe, the Idaho Department of Fish and Game, and other fishery management entities, as appropriate. If resolution is not possible through consultation, BPA will consider Measure 703(e)(l) as unimplementable, and refer it back to the Council for resolution.

4. The contractor will develop a schedule for project implementation.

34.19 PREPARE AND SUBMIT TO THE COUNCIL AN ANNUAL REPORT ON HATCHERY AND OTHER ARTIFICIAL PRODUCTION FACILITIES IN JULY. [SECTION 704(f),(h),(i),(j).]

BPA intends to carry out this task.

34.23 EVALUATE ONGOING WORK UNDER 704(h) AND SUBMIT A WORK PLAN TO THE COUNCIL FOR FUTURE EFFORTS BY OCTOBER 1985. [SECTION 704(h)(2).]

A. Program Area Activity Summary

Objectives for FY-86

1. Implement appropriate Recommendations of Project Evaluation Panel (November 19851.

2. Develop a Workgroup for Planning Improved Hatchery Effectiveness (February 1986).

3. Submit Plans for Implementing Program Section 704(h) in FY-87, FY-88, and FY-89 (September 1986).

4. Submit an Annual Report for FY-1986 (October 1986).

5. Coordinate Project Activities with Regional Entities (continuous).

6. Review and Comment on Proposed Amendments to the Fish and Wildlife Program (as required).

7. Manage Existing Projects (continuous).

8. Implement New Projects in FY-86 (by July 1986).

B. Budget Summary ($ X 1,000):

FY-86	FY-87	FY-88	FY-89
3,065	4,554	4,618	3,700

C. Staff:

Jerry Bouck and Ron Morinaka

D. Projects Currently Funded:

83-312 Epidemiology and Control of Infectious Diseases of Salmonids in the Columbia River Basin Section 704(h)(2)(D); Project Manager, G.R. Bouck

Wild and hatchery salmonids suffer diseases which adversely affect efforts to mitigate losses at hydro facilities. This project estimates disease induced mortality and morbidity in the hatcheries, rivers, and near-shore area of the Pacific Ocean. In cooperation with Indian, State, and Federal hatchery operators, researchers are collecting and reporting numbers and known causes of fish morbidity and mortality. The study will also determine the range and occurrence of important pathogens, including

bacterial kidney disease, IHN virus, and Certomyxosis. These occur naturally in the Columbia Rivers, produce fatal infections and cause far more mortality than was previously suspected. The diseases are spreading and increasing, yet no control is currently possible. For this reason, emphasis is being placed on prevention of diseases, rather than on cures.

Obligation Plan:

FY-86	FY-8 7	FY-88	FY-89
Yes	Yes	Yes	No

Work Plan and Milestones:

1. Begin: June, 1983; completion is scheduled for 1988.

2. Determine geographic range of C. Shasta (Dec. 1985); incidence of infection among outmigrating smolts, effects of saltwater in survival of infected smolts (March 1985) and describe the infectious state (July 1988).

3. Assess the contribution of BKD to ocean mortality (Jan. 1986) and determine if vertical transmission occurs (March 1985).

4. Determine the level of IHN virus in hatchery water supplies (July 1988); determine if IHN survives and replicates in fish eggs (March 1986); determine if epizootics are eliminated by using IHN-free water for early lifestage rearing (July 1988); and determine if broodstock culling will prevent epizootics (July 1988).

5. Provide a epidemiological data base for salmonid species in the Columbia River Basin (continuing).

6. Provide quarterly and annual reports of activities and significant events.

83-304 Development of Rapid Seriodiagnostic Tests for the Detection Surveillance, and Diagnosis of Five Important Pathogens of Fishes in the Columbia River Basin - Measure 704(h)(2)(D); Project Manager, K.Anderson

Hatchery-reared fish are important for the maintenance of salmonid species in the Columbia River Basin. Five fish diseases of major economic importance to salmonid culture are bacterial kidney disease (BKD), furunculosis, enteric redmouth disease (ERM), infectious hematopoietic necrosis (IHN), and infectious pancreatic necrosis (IPN). Researchers are attempting to improve methods for the detection of these five major fish diseases so that control measures being developed under a related BPA project (82-21) can be effectively applied. The enzyme-linked immunosorbent assay (ELISA) test, a rapid and sensitive detection method, is being utilized to accomplish this goal. Project completion is scheduled for 1986.

Obligation Plan:

FY-86	FY-8 7	FY-88	FY-89
Yes	No	No	No

Work Plan and Milestones:

1. Begin: 4/l/83; project completion scheduled for 1986.

2. Define a suitable antigen for each fish disease (BKD, furunculosis, ERM, IHN, and IPN).

3. Prepare a usable antibody for each disease.

4. Develop optimum test conditions for the Elisa test for each disease.

5. Provide quarterly and annual reports of activities and significant events.

83-363 Development of Diets for Enhanced Survival of Salmon - Measure 704(h)(2)(B); Project Manager, R. Morinaka

What a young salmon eats in its first months may make a significant difference in its ability to survive during its long journey to the sea. The Oregon Department of Fish and Wildlife is cooperating with the Oregon State University Seafood laboratory in a 10-year study to develop a high-quality animal protein diet and to determine how it relates to salmon survival. The Oregon Department of Fish and Wildlife will evaluate the effect of the new meal on the survival and return of coho and chinook salmon. Selected coho smolts were tagged with coded wires for their first release year. Biologists have designed and conducted laboratory feeding trials to test the relative nutritional value of vacuum dried meals on chinook fingerlings. The improved diet can be used in artificial production facilities throughout the Columbia River Basin to enhance salmon and steelhead production at mitigation hatcheries.

Obligation Plan:

FY-86	FY-87	F Y -	BY-89
Yes	Yes	Yes	Yes

Work Plan and Milestones:

1. Formulate test diets and complete laboratory feeding trials, May 1984.

2. Complete tagging and release of duplicate test groups - May 1987.

3. Collect and analyze tag returns - December 1992.

4. Submit recommendations for basin-wide use of test diets.

83-451 Stock Identification of Columbia River Chinook Salmon and Steelhead Trout - Measure 704(h)(2)(C); Project Manager, B.R. Bouck

This project is needed to identify the genetic makeup of Columbia River chinook salmon and steelhead trout in Oregon, Washington, and Idaho. Researchers are characterizing each wild and hatchery stock (a unique species, strain, or race of fish) by behavioral, physical, and biochemical characteristics, such as run timing, migration characteristics, fecundity, disease resistance, and various enyzmes. Research results will be used as a basis tor selection of donor stocks for hatchery programs and wild population supplementation.

Obligation Plan:

FY-86	FY-8 7	FY-88	FY-89
Yes	No	No	No

Work Plan and Milestones:

Task 1.1 Collect fish throughout the Columbia River system (Sept 1983 - Oct. 1985) and conduct electrophoretic analysis on each of the stocks (Dec. 1983 - Jan. 1986).

Task 2.1 List life history/natural history patterns, (Jan. 1986 - June 15, 1986), known disease resistance for each stock, known disease organisms present in each watershed, (Jan 1986 - June 1986 (, and measure morphological characters of fish (Feb 1985 - May 1986).

Task 3.1 Collect and analyze juvenile chinook salmon and steelhead trout from streams that had no previus wild runs (Sept. 1983 - Oct. 1985).

Task 4.1 Analyze the data (July 1985 - July 1986), and determine the similarities of the stocks (July 1985 - July 1986).

Task 5.1 List key characteristics of streams and hatcheries (June 1985 - Jan. 1986) and determine correlations between habitat types and the stock characteristics. (June 1986 - July 19861.

Task 6.1 Write and submit final report (April 1986 - July 1986).

84-43 Development of a Subunit Vaccine Against Infectious Hematopoietic Necrosis (IHN) Virus - Measure 704(h)(2)(D); Project Manager, G.R. Bouck

Infectious hematopoietic necrosis (IHN) is a viral disease of fish that, in recent years, has caused significant mortality at salmon and steelhead hatcheries built to mitigate losses resulting from hydroelectric development throughout the Columbia River Basin. The goal of this project is to develop a vaccine that will protect salmon and steelhead from IHN. As a part of this project, IHN-specific proteins will be produced by bacterial clones and used to induce immunity to IHN in salmon. Researchers will conduct a field test at the State of Oregon's Round Butte Hatchery to determine if these efforts to induce immunity will protect salmon and steelhead being reared at that hatchery. The duration of induced immunity will be determined in laboratory-reared rainbow trout, steelhead trout, and sockeye salmon. Biologists will also evaluate various methods for immunizing fish against IHN and develop protocols for vaccine production through evaluation of various cloning processes. Project completion is scheduled for 1987.

Obligation Plan:

FY-86	FY-87	FY-88	FY-89
Yes	No	No	No

Work plan and Milestones:

Objective 1 Equipment Laboratory and Hire Personnel (Completed).

Objective 2 Construct Recombinant Plasmids containing Viral Genes in Efficient Expression Vectors (July 84 - July 86).

Objective 3 Evaluate Immunization Methods for IHNV Vaccination (Prototype Vaccine) (Jan 1985 - June 1986).

Objective 4 Evaluate the Immunogenecity of IHNV-Specific Proteins in Salmon and Trout (July 1985 - June 1986).

Objective 5 Determine "Best" Method for Vaccine Preparation (Dec. 1985 - June 1986).

Objective 6 Prepare Summary Report and Recommendations for (April 1986 - July 1986).

84-44 Etiology of Early Lifestage Diseases - Measure 704(h)(2)(D); Project Manager, G.R. Bouck

Mitigation of hydroelectric development related losses of fish are hampered by fish diseases that are inadvertently transmitted from mother to egg before spawning. Preliminary data has revealed numerous unidentified bacteria in the yolk of developing eggs and sac-fry. These maternally transferred bacteria have been associated mostly with chinook salmon, but may also account for significant mortality in other salmon species and steelhead. The project will isolate and identify pathogens, characterize their pathology, determine levels of endotoxin (a bacterial by-product which is toxic to the fish host), and investigate remedial actions. The result will be a better understanding of maternally transferred diseases, their effect and how to cope with them.

Obligation Plan:

FY-86	FY-8 7	FY-88	FY-89
0	No	No	No

WORK PLAN

Objective 1 Collect Samples and Establish Bacterial Cultures: (Completed).

Objective 2 Determine if Bacteria in Eggs and Ovarian Fluid are the same (by August 1986).

Objective 3 Produce Antibodies to Confirm Presence Various Bacterial Forms Within the Yolk of Unfertilized Eggs and Ovarian Fluid (March 1, 1985 - July 31, 1986)

Objective 4 Determine Endotoxin Levels in Fish Food, Ovarian Fluid and Ova and Correlate with Resulting Egg/Fry Mortality (Sept 1984 - April 1985).

Objective 5 Challenge Selected Hatchery Reared Fish to Bacterial Challenges Using Bacteria Provided In Task 3.3: (Aug 1986)

Objective 6 Report Results (July 31, 1986).

84-45 Influence of Vitamin Nutrition on the Immunity Response of Hatchery-Reared Salmonids - Measure 704(h)(2)(D); Project Manager, G.R. Bouck

It has been demonstrated widely that increased levels of certain vitamins can protect man and domestic animals from infectious diseases. Recent evidence has established that this also applies to hatchery-reared fish. However, the amounts required for maximum "disease protection" have not been identified for Pacific salmon. This project will identify those amounts for six vitamins, including vitamins C, B_6, E, folic acid, pantothenic acid, and riboflavin. The study will also develop recommendations for the manufacture, storage, and handling of practical, economical vitamin-enriched fish feeds to be used at Columbia River Basin hatcheries. The outcome of this project will be a better, more economical salmon diet, which will result in more adult hatchery-reared salmon and more effeicient efforts to mitigate losses resulting from hydroelectric development. Project completion is scheduled for 1989.

Obligation Plan:

FY-86	FY-8 7	FY-88	FY-89
Yes	Yes	Yes	No

Work Plan and Milestones:

Task 1 Standardize laboratory techniques for assessing general immunocompetence of juvenile chinook salmon and (Completion: March 1986).

Task 2 Determine pyridoxine requirements for peak immune response and disease resistance (FWS) (Jan. 1986 - April 1987).

Task 3 Determine folic acid requirement for peak immune response and disease resistance (Jan. 1986 - April 1987).

Task 4 Determine pantothenic acid requirement for peak immunocompetence and disease resistance (Oct. 1987 - April 1988).

Task 5 Determine the amount of dietary rebotlavin required for peak functioning of immune system and resistance to RKD and furunculosis (Jan. 1987 - April 1988).

Task 6 Determine vitamin E requirement for peak immunity and disease resistance (FWS) (Jan. 1988 - April 1989).

Task 7 Determine amount of ascorbic acid required for peak immune response and disease resistance (FWS) (July 1988 - April 1989).

Task 8 Preparation and publications of final report (Jan. 1989 - Oct. 1989).

84-46 Evaluate Vaccines for Bacterial Kidney Disease in Salmon - Measure 704(h)(2)(D); Project Manager, G.R. Bouck

Hatchery mitigation of fish losses resulting from hydroelectric development is frustrated by Bacterial Kidney Disease (BKD), which causes extensive mortality to hatchery-reared salmon and steelhead trout. This project will determine the components of the pathogen and evaluate how well they induce immunity against BKD. Researchers will also examine intercellular antigens by testing them in natural molecular form, as well as in chemically modified forms which will augment immunity. All antigen preparations will be assessed as to their ability to induce serum antibodies to BKD, cellular immune responses to BKD, and resistance to challenge with live R. salmoninarum. Upon the completion of the comparative evaluation of the antigen preparations, the vaccine will be ranked with respect to its ability to induce effective immunity to BKD, the anticipated cost of vaccine production, and the technical difficulty involved in vaccine production. Each antigen preparation capable of inducing a significant degree of protection will have production protocols described fully, along with suggestions for the facilitation of large-scale vaccine production. The project is scheduled for completion in 1986.

Obligation:

FY-86	FY-87	FY-88	FY-89
Yes	No	No	No

Work Plan and Milestones:

Objective 1.0 Complete startup phase (Nov 1984).

Objective 2.0 Isolate Renibacterium salmoninarum antigens and select candidates for chemical modification (July 1984 - March 1986).

Objective 3.0 Chemical modification of purified antigenic material from R. salmoninarum cells by three agents (Sept 1984 - Jan 1986).

Objective 4.0 Determination of the relative efficiencies of modified antigens to induce a humoral response to R. salmoninarum (March 1985 - March 1987).

Objective 5.0 Determine the ability of the antigen preparatoins to induce a cell-mediated immune response (March 1985 - March 1987).

Objective 6.0 Determination of the resistance of BKD immunized animals to live BKD challenge (Jan 1986 - March 1987).

Objective 7.0 Determination of the most efficacious routes for large-scale immunization (Jan. 1986 - March 1987).

Objective 8.0 Write project summary report. March 1987 - June 1987.

E. * New Projects:

While new (FY-86) projects in this section depend on action by the Northwest Power Planning Council, BPA developed the following brief project descriptions in cooperation with the fishery agencies, and other publics and modified these in response to public comments. The descriptions are neither intended to be exhaustive, nor immutable; their main purpose is to indicate the general concept therein. BPA will continue to work closely with appropriate experts to refine these into procurement documents, and intends to use peer panels to evaluate project proposals (if projects are procured).

Strategic choices on implementation were necessary by BPA to assure best value for the Region and to accomodate BPA workload. In this regard, BPA has merged the tasks of some projects; this was done to facilitate implementation, diminish costs, and increase benefits. As one result, BPA might be able to implement nearly all the tasks in the top 10 projects Failure to take this action would reduce this figure by at least 20% increase the costs, and promote delays.

During FY-1986, BPA will continue to work closely with the Agencies, Tribes, PUDs, NPPC, and other publics to develop plans for improving hatchery effectiveness. This effort will culminate in proposed new projects and their budgets for FY-1987 and outyears.

86-19* Prevention of IHN Disease - 704(h)(2)(D); Project Manager, G.R. Bouck

1. Evaluate the state-of-the-art in controling or preventing IHN disease including unpublished, ongoing projects.

2. Identify sources and reservoirs of IHN infection.

3. Develop and test tactics to prevent horizontal and vertical transmission of IHN virus to eggs, fry and fingerlings of anadromous fish.

4. Identify, test and evaluate antiviral chemotherapeutants for preventing or controlling IHN by treating eggs or fry or by feeding to fish.

5. Delineate impact of hatchery practices on IHN.

* Implementation of new projects assumes action by the Northwest Power Planning Council.

86-23* Prevention of Bacterial Kidney Disease (BKD) - 704(h)(2)(D); Project Manager, G.R. Bouck

1. Evaluate the state-of-the-art in controling or preventing BKD, including ongoing projects and then refine proposed approaches.

2. Delineate the impact of hatchery practices on BKD and develop remedial techniques where possible.

3. Identify and propose further testing and evaluation of promising methods of controlling or preventing BKD including chemotherapeutants, brood stock culling, and genetic sorting.

* Implementation of new projects assumes action by the Northwest Power Planning Council.

86-24* Anadromous Fish Health Monitoring in Idaho - 704(h)(2)(D); Project manager, G.R. Bouck

86-53* Anadromous Fish Health Monitoring in Oregon - 704(h)(2)(D); Project Manager, G.R. Bouck

86-54* Anadromous Fish Health Monitoring in Washington - 704(h)(2)(B); Project Manager, G.R. Bouck

1. In cooperation with other N.W. fishery agencies, conduct a standardized fish health monitoring and hatchery data-base program, consistent with the procedures set forth by the Fish Health Protection Committee (FHPC) (BPA will consider funding only that in addition to and not in lieu of authorized programs).

2. At anadromous fish hatcheries in the Columbia Basin, conduct a routine health examination every month, a more extensive health examination at mid-term, and a pre-liberation health examination for infectious diseases. Collect and report into the hatchery data-base, the frequency and distribution of all diagnosed fish diseases (epidemiology). Include representative length-weight frequencies at each inspection; include organosomatic and histopathological analyses in the pre-release exam.

3. Collect and report into the hatchery data-base systems on cultural practices concurrent with disease inspections, including lot genetics, growth, nutrition/food conversion, water supplies/flow relationships/ and rearing practices.

4. At selected locations, evaluate the costs of fish health monitoring, and the data-base system to increased hatchery effectiveness and benefits to the fishery.

5. Conduct routine disease examinations at spawning to minimize BKD and IHN.

86-57* Comprehensive, Integrated, Size and Time of Release Evaluation - 704(h)(2)(B); Project Manager, R. Morinaka.

Phase I. Survey and Planning

Task 1. Conduct literature review and survey existing size/time at release practices and compare with adult survival.

Task 2. Recommend appropriate release practices based on syntheses of existing data.

Task 3. Plan and coordinate comprehensive size/time at release study.

Phase II. (If approved)

Task 1. Rear and release stocks and obtain complete brood histories.

Task 2. Monitor environmental condition during migration in river, estuary, and near-shore areas at time of entry.

Task 3. Estimate contribution to the fishery and adult return to the hatchery.

Task 4. Recommend appropriate practices for size/time at release.

* Implementation of new projects assumes action by the Northwest Power Planning Council.

86-84* Development and Testing of Smolt Indices - 704(h)(2)m; Project Manager, R. Morinaka.

1. Evaluate smolt indices used for hatchery fish and compare with naturally produced fish in the same watershed area.

2. Identify new physiological, non-physiological and behavioral indicators and compare them with presently used indicators to develop a smolt index.

3. Develop a broadly acceptable definition of smoltification.

4. Test methods to control and manipulate smoltification.

* Implementation of new projects assumes action by the Northwest Power Planning Council.

86-85* Evaluation of Smolt Indices and Hatchery Practices - 704(h)(2)(A); Project Manager, R. Morinaka.

1. Define smoltification and identify which environmental factors in the hatchery enhance or repress it, including the rate, synchsory and duration of smolt development. Compare facilities which have high versus low rates of survival to adult stages.

2. Using the information gained above, develop standardized, cultural or management practices and rearing and release strategies for lower, middle, and upper river fish production facilities. Include criteria for loading, feeding and water quality for respective species.

3. Determine the benefits, costs, and willingness to use smolt indices at Columbia River Basin hatcheries relative to water budget operational costs, and adult contribution.

* Implementation of new projects assumes action by the Northwest Power Planning Council.

86-86* Improved Fish Transportation Technology in Outplanting Hatchery Fish - 704(h)(2)(A); Project Manager, R. Morinaka

1. Survey existing systems and summarize state-of-the-art in fish transportation.

2. Determine what hatchery practices can be initiated to better prepare fish for transportation.

3. Determine the impact of drugs/chemicals on survival and imprinting of transported fish.

4. Investigate new transportation techniques and equipment and the use of stress-reduction release ponds.

5. Determine magnitude of disease transmission during transportation and the impact on smolt survival.

* Implementation of new projects assumes action by the Northwest Power Planning Council.

86-87* Technical Information Transfer for Improving Hatchery Effectiveness - 704(h)(2)(B); Project Manager, R. Morinaka

1. Develop and demonstrate effective communication methodology for technology transfer between research, fishery managers, and other data providers and data users such as hatchery personnel.

2. Identify the need for specific training or information transfer for hatchery personnel at hatchery sites.

3. Investigate and recommend how hatchery personnel can be involved more directly in the identification and resolution of problems related to Section 704(h).

* Implementation of new projects'assumes action by the Northwest Power Planning Council.

34.24 SUBMIT A WORK PLAN FOR FUNDING SUPPLEMENTATION STUDIES BY OCTOBER 1985. [SECTION 704(k)(l).]

A. Action Item Budget Summary: ($ x 1,000)

FY-86	FY-87	FY-88	FY-89
500	550	550	0

B. Projects: None

C. New Projects:

86-35 * Stock Supplementation Review;
86-62 * Natural Stock Supplementation Evaluation; Project Leader, R. Morinaka

Supplementation with hatchery fish is a very high priority of the managing agencies. The use of this scarce resource must be by the most efficient means and methods available to the fishery agencies. These projects will conduct research to develop methodology to make sure our goals in rebuilding upriver runs are achieved.

Obligation Plan

FY-86	FY-87	FY-88	FY-89	FY-90
Yes	Yes	Yes	Yes	Yes

Workplan and Milestone:

1. Begin a literature search and evaluation of past efforts; complete on or about January 1986.

2. Develop target areas, species and methodology matrix on or about June, 1986.

3. Submit recommendations for seeding densities; life stages by geographical areas on or about 1990.

4. Evaluate genetic and behavioral effects of using hatchery fish to supplement natural populations; fund annually after 1990.

* BPA will attempt to implement this in FY-86.

34.25 FUND THE WILLAMETTE BASIN STUDY PLAN. [SECTION 704(k)(2).]

A. Action Item Budget Summary; ($ x 1,000)

FY-86	FY-8 7	FY-88	FY-89
Restricted Procurement Information			

85-68 Determine Best Method for Supplementing Natural Stocks of Spring Chinook With Hatchery Stocks in the Willamette River - Measure 704(k)(2); Project Manager, R. Morinaka

The emphasis of the Council's Fish and Wildlife Program is for restoration of self-sustaining natural populations of salmon and steelhead. To reach this objective, depressed natural stocks must be supplemented with artificially produced fish. Under this study, biologists will determine the best methods of introducing artificially propagated spring chinook pre-smolts or eggs into natural spawning sites in order to suppplement natural stock of spring chinook. This study will be conducted on the Willamette River, Oregon, with an expectation that study results will be applicable elsewhere in the Columbia River Basin. The Willamette River was selected for this study because researchers know a great deal about the Willamette and its spring chinook runs, and because surplus spring chinook are available from several Willamette River hatcheries. Biologists will carry out the study in stream areas that have acceptable habitat, that are devoid of or have a low population of spring chinook, and where the introduction of spring chinook'will not endanger the production of other desirable species.

Obligation Plan:

FY-86	FY-8 7	FY-88	FY-89
Yes	Yes	Yes	Yes

Work Plan and Milestones:

1. Complete literature review and study plan on or about September 1985.

2. Submit study plan to NPPC, October, 1985.

3. Conduct releases of various life stages and evaluate contribution through September, 1988.

4. Complete tag returns and contributions through Sept. 1991.

34.27 FUND AN EVALUATION OF HATCHERY FISH RELEASE SITES AND LEVELS OF RELEASE COMPATIBLE WITH NATURAL PROPAGATION AND HARVEST MANAGEMENT BY OCTOBER 1985. [SECTION 704(g)(1).]

A. Action Item Budget Summary: ($ x 1,000)

FY-86	FY-87	FY-88	FY-89
Restricted	Procurement	Information	

B. Projects: None

C. New Projects:

86-63 Evaluation of Hatchery Fish Release Sites - Measure 704(g)(l); Project Manager, R. Morinaka

Columbia River Basin Fish and Wildlife Program Measure 704(g)(l) calls for the reprogramming of hatchery fish from lower river hatcheries for release at upriver sites. All hatcheries currently scheduled for reprogramming were constructed as mitigation on Federal water projects impacts on salmon and steelhead resources. This project focuses on identification and resolution of problems associated with liberating hatchery fish at upriver sites. Problems to be addressed include genetic compatibility of hatchery fish with wild fish at the release site, recovery from transportation stress, fish disease, and site accessibility. The study also will develop strategies for liberation of reprogrammed fish and recommend upriver release sites. Full coordination will be needed on this project with the settlement of Oregon vs US. The full scope of work for this project will be determined by these settlements.

Obligation Plan:

FY-86	FY-87	FY-88	EY-89
Yes	Yes	Yes	Yes

Work Plan and Milestones:

1. Initiate operational plan development on or about June, 1986.
2. Complete operational plan on or about Dec., 1988.
3. Initiate evaluation of operational plan identified in operational plan by FY-89.

34.28 UPON APPROVAL OF A REPROGRAMMING PLAN, FUND HATCHERY RELEASES IN THE UPPER COLUMBIA TO ASSIST IN RESTORING NATURALLY SPAWNING STOCKS. [SECTION 704(g)(2). I

A. Action Item Budget Summary: ($ x 1,000)

FY-86	FY-87	FY-88	FY-89
Restricted	Procurement	Information	

B. Projects: None in FY-86

C. New Projects: (Not until FY-1987)

87-21 Reprogramned Hatchery Releases - 704(g)(2); Project Manager, R. Morinaka

Implementation of the reprogramming effort will be initiated by this project. The operational funds to reprogram lower river fish to upper river release sites will be provided through this project in FY-1987.

Work Plan and Milestones:

1. Initiate reprogramming of hatchery fish transportation in accordance with recommendations from 86-63. Fund annually.

35.1 CONTINUE TO APPLY PROGRAM SECTIONS 1204(a),(b),(c), AND (e) TO ALL NEW PROJECTS.

In the event of new hydro development, BPA intends to carry out this task.

35.2 IF NEW RESERVOIRS ARE CONSTRUCTED, DEDICATE SPECIFIC PORTIONS OF STORAGE TO PROTECT, MITIGATE AND ENHANCE FISH AND WILDLIFE. [SECTION 704(b)(16).]

BPA intends to carry out this task

35.3 PREPARE AND SUBMIT TO THE COUNCIL ANNUAL REPORTS ON ACTIVITIES UNDERTAKEN IN THIS AREA EACH JUNE. [SECTION 1304(a)(5), 1304(c).]

BPA intends to carry out this task.

35.4 COMPLETE STUDY AND DEVELOP METHODS FOR ASSESSING CUMULATIVE EFFECTS BY NOVEMBER 1985. [SECTION 1204(b)(2).]

A. Action Item Budget Summary:

FY-86	EY-87	FY-88	FY-89

Restricted Procurement Information

B. Project:

84-41 Determination of Methods for Assessing Cumulative Effects of Hydroelectric Development in the Columbia River Basin - 1204(b)(2); Project Manager, D. Johnson

Past hydroelectric planning and development did not provide necessary consideration of the cumulative effects of individual hydroelectric projects on fish and wildlife in relation to the effects of other existing and proposed projects. This resulted in large cumulative losses of fish and wildlife resources. Existing techniques for assessment of hydroelectric effects will be analyzed and recommended for inclusion in the methods for use by hydroelectric operators, planners, and others in their review of proposed hydroelectric development in the region. The methods will be incorporated by the Northwest Power Planning Council into its Fish and Wildlife Program and Energy Plan. The objective is to minimize any additional conflicts from future hydroelectric development. The methods will be field-tested during FY 1986 and mddified as appropriate.

Obligation Plan:

FY-86	FY-87	FY-88	EY-89
Yes	No	No	No

Work Plan and Milestones:

Begin: September 1984; completion of all tasks is scheduled for December, 1985 except for tasks 6.3 and 6.4 which is scheduled for completion by June, 1986.

35.5 COMPLETE THE BONNEVILLE PORTION OF THE PROTECTED AREAS STUDY BY JANUARY 1986. [SECTION 1204(c)(1).]

A. Action Item Budget Summary:

FY-86	FY-87	EY-88	FY-89
Restricted Procurement Information			

B. Project:

84-40 Pacific Northwest Rivers Study - 1204(c)(l); Project Manager, D. Johnson

The recent surge of interest in hydropower as an energy resource has intensified public awareness of the potential for conflict between hydroelectric development and other river values. The Northwest Power Planning Council's (Council) Fish and Wildlife Program Measure 1204(D)(l) requests BPA to develop a method to objectively evaluate rivers and establish protected areas for fish and wildlife from hydroelectric development. BPA must reliably forecast and acquire as needed and available to the region, future cost effective hydropower. To ensure that all relevant values are considered by each, BPA and the Federal Energy Regulatory Commission (FERC) when evaluating potential hydropower sites, will assist the States, the Tribes, the Federal resource and land management agencies, energy development interests and interested public to identify significant river values throughout the region. As proposed, the study will assess and document the significance of the region's river resources. Findings will form a resource information base for use in Council, BPA, and State hydropower planning activities.

Obligation Plan:

FY-86	FY-87	FY-88	EY-89
No	No	No	No

Work Plan and Milestones:

1. Begin study September, 1984: coordinate with regional agencies and Tribes for their participation to develop methods for the assessment.

2. Complete River Assessment (Methods) Manual in June, 1985.

3. Begin assessment in July, 1985.

4. Complete assessment in November, 1985.

35.6 DEVELOP NEW DESIGNS FOR TURBINE INTAKE SCREENS. PROPOSE STUDY DESIGN TO THE COUNCIL BY JANUARY 1987. COMPLETE TESTS AND REPORT TO THE COUNCIL BY JANUARY 1989. [SECTION **1204(d)(l).]**

A. Action Item Budget Summary:

FY-86	FY-87	FY-88	FY-89
Restricted Procurement Information			

B. Project:

86-46 Develop Alternate Small Hydroelectric Turbine Intake Screen Designs: Project Manager, D. Johnson

There are several new turbine intake screen designs which have been developed in recent years, however these screens have not been tested sufficiently to be characterized as proven, even though they have the potential for reducing costs as well as improving juvenile salmon and steelhead mortality. Installation and maintenance of currently available screening systems are: expensive , site specific, and can result in improving juvenile survival, from their use. This pro jet t will determine the effectiveness of new designs for turbine intake screens and their suitability for application at small hydroelectric facilities. The project will design and test economical screens which have generic applicability to regional hydropower developers.

Obligation Plan:

FY-86	FY-87	FY-88	FY-89
Yes	Yes	Yes	Yes

Work Plan and Milestones:

1. October - November 1985, assemble a technical Workgroup to scope and determine research needs.

2. November, 1985 - June, 1986: develop procurement solicitation **and** negotiate contract to perform **study.**

3. Begin design in July, 1986, complete design by January, 1987.

4. Construct and test in 1986 - 1988 and complete by January, 1989.

36.2 FUND THE GOALS STUDY. [SECTIONS 201(1)-(4). 1

BPA intends to carry out this task.

38.1 KNOWN STOCK FISHERIES:

SHARE FUNDING, WITH THE FISHERY MANAGEMENT AGENCIES, OF A FIVE-YEAR DEMONSTRATION PROGRAM TO DETERMINE THE EFFECTIVENESS OF USING ELECTROPHORESIS AS A FISHERY MANAGEMENT TOOL. INITIATE THE DEMONSTRATION PROGRAM DURING THE 1985 OCEAN FISHING SEASON OR SUBSEQUENT SEASONS IF AND WHEN THEY OCCUR. [SECTION 504(c)(1).1

DETERMINE WHICH KNOWN-STOCK FISHERY MEASURES CURRENTLY FUNDED UNDER SECTION 704(k)(3) SHOULD BE CLASSIFIED AS RESEARCH (SECTION 504(c)(2)) AND WHICH SHOULD BE CLASSIFIED AS DEMONSTRATION PROGRAMS (SECTION 504(c)(3)). EVALUATE THE RESEARCH PROJECTS PURSUANT TO ACTION ITEM 39.

A. Action Item Budget Summary: ($ x 1,000)

FY-86	FY-87	FY-88	FY-89
100	70	0	0

B. Project:

85-84 Electrophoresis Demonstration Project - 504(c)(l); Project Manager, T. Clune

BPA is sharing the funding of a one-year demonstration project with fishery management agencies to determine the effectiveness of using electrophoresis as a fishery management tool. The project is being evaluated pursuant to Action Item 39.1.

Obligation Plan:

FY-86	FY-87	FY-88	EY-89
No	No	No	NO

Work Plan and Milestones:

BPA funded portion of the project is scheduled for completion in October 1985.

84-2 Protection of Wild Steelhead in the Upper Snake River and Evaluation of Effectiveness - Measure 504(c)(3); Project Manager, R. Morinaka

Extensive hydroelectric development in the Snake River Basin has resulted in depleted stocks of valuable wild steelhead, paradoxically in the midst of harvestable surpluses of hatchery fish. Protection of the wild fish would require either no fishing, or fishing with harvesting limited to surplus hatchery fish. Removal of the adipose fin of all hatchery-reared steelhead allows the latter, but injures

the young fish and deprives it of the adipose fin's function(s). This project annually clips the adipose fins of about 5 million fish, and evaluates the result and impact to their well-being.

Obligation Plan:

FY-86	FY-8 7	FY-88	FY-89
Yes	Yes	No	No

Work Plan and Milestones:

1. BPA's support of this demonstration project will continue through 1987.

2. Evaluation of the feasibility of this methodology will be completed by 1987.

39.1 CONTINUE ONGOING WORK FUNDED UNDER THE FOLLOWING MEASURES UNTIL THE COUNCIL HAS ESTABLISHED RESEARCH OBJECTIVES (ACTION ITEM 39.3). NO NEW RESEARCH PROJECTS UNDER THESE MEASURES SHALL BE FUNDED IN FISCAL YEAR 1985 UNTIL ESTABLISHMENT OF THOSE OBJECTIVES.

404(b)(18)	604(d)(2)	704(k)(l)
404(c)(l)	604(d)(3)	
404(c)(2)	704(h)	
504(c)(2)	704(j)(l)	

BPA did not fund projects under these measures in FY-85 (as requested), but intends to implement projects in FY-86.

39.2 TO ENSURE PROPER COORDINATION IN THE IMPLEMENTATION OF THE PROGRAM, SUBMIT TO THE COUNCIL BY SEPTEMBER 15 OF EACH YEAR THEREAFTER (STARTING IN 1985). EXPENDITURE AND OBLIGATION PLANS AND PROGRAM WORK PLANS. INCLUDE SCHEDULES WITH KEY MILESTONES FOR THE SUBSEQUENT FISCAL YEAR. THEREAFTER, ON A QUARTERLY BASIS, UPDATE EXPENDITURE AND OBLIGATION INFORMATION AND SUBMIT IT TO THE COUNCIL. PREVIEW OF EACH PRIOR YEAR'S EXPENDITURE AND OBLIGATION, EXPLICITLY COMPARING PROJECTED AND ACTUAL EXPENDITURES AND OBLIGATIONS. REPORT EXPENDITURES FOR EACH PROGRAM MEASURE OR PROJECT RELATED TO A PROGRAM MEASURE. ALSO, IDENTIFY THE RESPONSIBLE PERSONS WITHIN EACH AGENCY.(sic) [SECTION 1304(a), 1304(e).]

BPA intends to carry out this task.

40.1 UPON COMPLETION OF ALL MITIGATION STATUS REPORTS, THE FISH AND WILDLIFE AGENCIES AND TRIBES WILL SUBMIT A LIST OF PRIORITY PROJECTS TO BONNEVILLE AND COUNCIL. CONSULTATIONS AMONG AFFECTED PARTIES SHOULD BEGIN. THE CONSULTATION SHOULD DEFINE THE NEED FOR EITHER LOSS ESTIMATES OR ACTUAL MITIGATION PROJECTS. PREPARE AND SUBMIT TO THE COUNCIL AN ANNUAL REPORT ON ACTIVITIES EACH APRIL. (SECTION **1004(B)(1),(2),(3).]**

BPA intends to carry out this task.

40.2 FUND LOSS STATEMENTS AS NEEDS ARE IDENTIFIED. [SECTION 1004(b)(2).]
&
40.4 WHERE APPROPRIATE, DEVELOP MITIGATION PLANS [SECTION 1004 (b)(3)&(5). 1004 (d)(l)&(2)]

A. Action Item Budget Summary: ($ x 1,000)

FY-86	FY-87	FY-88	FY-89
1,119	690	990	500

B. Projects:

Ongoing:

83-2 Impacts of Water Levels on Canada Geese - Measure 1004(b)(2) & (3); Project Manager, J. Meyer

Water level fluctuations influenced by hyroelectric dams may greatly affect important riparian (river, lake, or streamside) nesting areas. Biologists working for the Salish-Kootenai Tribes are studying Canada geese in the Flathead Valley of western Montana. This study will determine the effect of Kerr and Hungry Horse Dam operation on Canada geese nesting habitat.

Related nesting success and gosling survival is also being investigated. The study will result in recommendations to mitigate Canada goose losses or to protect the population from degradation.

Oblidation Plan:

FY-86	EY-87	FY-88	FY-89
Yes	No	No	NO

Work Plan and Milestones::

1. Begin: January 1983, completion is scheduled for July 1987.

2. Determine the effects of water level fluctuation on Canada goose production and their habitat.

3. Determine the population impacts of providing artificial nest sites secure from water level fluctuations.

4. Formulate mitigation/management recommendations necessary to protect and enhance Canada goose populations in the lower Flathead drainage under current and potential future hydroelectric operations.

83-498 Effects of Water Levels on Productivity of Canada Geese in the Northern Flathead Valley - Measur 1004(b)(2) & (3); Project Manager, J. Meyer

Goose nesting and brooding habitat may have been effected as a result of operation of Hungry Horse and Kerr Dams. The Montana Department of Fish, Wildlife, and Parks is inventorying Canada goose nesting and brooding habitats and evaluating nesting success and gosling survival. Research results will help managers make recommendations to optimize compatibility between water level regimes and goose production. The information obtained will permit establishment of future management practices that allow goose populations to remain stable or increase under the best attainable water regimes.

Obligation Plan:

FY-86	FY-8 7	FY -88	FY-89
Yes	No	No	No

Work Plan and Milestones:

1. Begin: March 1984; completion is scheduled for August, 1987.

2. Determine effects of water level fluctuation on goose nesting success and nesting habitat.

3. Determine effects of water level fluctuation on gosling survival and brooding habitat.

4. Formulate mitigation/management recommendat ions to protect and enhance Canada goose populations under current and potential future hydroelectric operations.

84-36 Wildlife and Wildlife Habitat Loss Assessments for Willamette River Basin Federal Hydroelectric Facilities - Measure 1004(b)(2); Project Manager, J. Meyer

The purpose of the project is to estimate net losses of wildlife and wildlife habitat resulting from development and operation of Federal hydroelectric facilities in the Willamette River Basin in Oregon. Loss estimates will be developed using a habitat based evaluation procedure, and will address both positive and negative effects resulting from the projects. Phase I facilities include Cougar, Lookout Point, Dexter, and Hills Creek. Phase II facilities include Green Peter/Foster, and Detroit/Big Cliff.

Obligation Plan:

FY-86	FY-8 7	FY-88	FY-89
No	No	No	No

Work Plan and Milestones:

1. Begin: September 1984; completion is scheduled for December 1985.

   a. Phase I facilities (Cougar, Lookout Point, Dexter, and Hills Creek). Completed July 1985.

   b. Phase II facilities (Green Peter/Foster, and Detroit/Big Cliff) to be completed December 1985.

2. Identify effects of past development and operation to wildlife and wildlife habitat from the Federal hydroelectric facilities in the Willamette River Basin.

3. Determine the hydroelectric portion of the wildlife/wildlife habitat losses for the facilities.

4. Phase I facilities consultation meeting held July 1985.

5. Phase II facilities consultation meeting scheduled for December 1985.

85-l Wildlife Loss Assessments for Anderson Ranch, Black Canyon, and Boise Diversion Hydroelectric Facilities in Idaho - Measure 1004(b)(2)*
Project Manager, J. Meyer

The purpose of the project is to evaluate impacts of construction and operation of Anderson Ranch, Black Canyon, and Boise Diversion Facilities on wildlife. The project will result in an estimate of net losses of wildlife and wildlife habitat. Loss estimates will be developed using a habitat based evaluation procedure, and will address both positive and negative effects resulting from the projects.

Obligation Plan:

FY-86	FY-8 7	FY-88	FY-89
No	No	No	No

Work Plan and Milestones:

1. Begin: May 1985; completion is scheduled for December 1985.

2. Formal consultation meeting scheduled for December 1985.

3. Identify effects of past development and operation to wildlife and wildlife habitat.

4. Determine the hydroelectric portion of the wildlife/wildlife habitat losses.

c. New Projects:

86-64 Willamette River Projects Wildlife Protection Mitigation, and Enhancement Plan Measure 1004(b)(3); Project Manager, J. Meyer

The project is designed to meet the requirements of Measure 1004(b)(3) of the Columbia River Basin Fish and Wildlife Program. Recommendations to provide for the protection, mitigation, and enhancement of wildlife affected by hydroelectric development and operation of Federal hydroelectric facilities in the Willamette River Basin in Oregon will be developed (wildlife plans). The wildlife plans will take into consideration wildlife losses, along with needs, and management goals and programs for affected wildlife species.

Facilities: Cougar, Lookout Point, Dexter, Hills Creek, Green Peter/Foster and Detroit/Big Cliff projects.

Obligation Plan:

FY-86	FY-8 7	FY-88	FY-89
Yes	Yes	No	No

Work Plan and Milestones;

1. Begin: December 1985; completion scheduled for December 1986.
2. Select target wildlife species.
3. Identify needs, and management goals and plans for target species.
4. Develop goals and objectives for the protection, mitigation, and enhancement of target wildlife species.
5. Recommend actions to protect, mitigate, and enhance wildlife affected by hydroelectric development and operation.

86-70 Lower Columbia (Bonneville Dam) Wildlife Protection, Mitigation, and Enhancement Planning - Measures 1004(b)(2)&(3); Project Manager, J. Meyer

The project is intended to meet the requirements of Measures 1004 (b)(2)&(3) of the Columbia River Basin Fish and Wildlife Program for Bonneville Dam located on the Mainstem Columbia River in Oregon and Washington. Investigators will identify the net effects on wildlife from hydroelectric development and operation, along with identifying needs, and management goals and plans for target wildlife species. The project is to result in recommendations for the protection, mitigation, and enhancement of affected wildlife.

Obligation Plan:

FY-86	FY-8 7	FY-88	FY-89
Yes	Yes	No	No

Work Plan and Milestones:

1. Begin: November 1985; completion scheduled for October 1986.

2. Select target wildlife species.

3. Determine the net effects from hydroelectric development and operation to wildlife.

4. Identify needs, and management goals and plans for the target wildlife species.

5. Develop protection, mitigation, and enhancement goals and objectives for the target wildlife species.

6. Recommend actions to protect, mitigate, and enhance target wildlife species.

86-71 Dworshak Wildlife Mitigation Planning - Measure 1004(b)(2) & (3); Project Manager, J. Meyer

The project consists of using a technical work group approach for defining and developing actions for wildlife affected by hydroelectric development and operation of Dworshak.

Tasks to be accomplished by the project include:

1. Identifying and reviewing past, current, **and** presently proposed studies, programs, and mitigation actions for Dworshak to avoid overlap and duplication of efforts;

2. Formulating a list of target wildlife species;

3. Reviewing existing information on the target wildlife species and identifying affects to these species from hydroelectric development and operation;

4. Developing objectives (goals) for their protection, mitigation, and enhancement along with identifying how these objectives relate to existing management plans or programs;

5. Identifying those target species for which additional information or studies are needed and the type of information needed;

6. Recommending actions to protect, mitigate, and enhance the target species.

Obligation Plan:

FY-86	FY-87	FY-88	FY-89
Yes	Yes	Yes	No

Work Plan and Milestones:

1. Establishment of technical work group - August 1985.

2. Project needs (tasks) and schedule are to be developed by the work group.

86-73 Upper Snake Projects Wildlife Protection, Mitigation, and Enhancement Plan - Measure 1004(b)(3); Project Manger, J. Meyer

The project is designed to meet the requirements of Measure 1004(b)(2)&(3); of the Columbia River Basin Fish and Wildlife Program. Recommendations to provide for the protection, mitigation, and enhancement of wildlife affected by hydroelectric development and operation of Federal hydroelectric facilities (dams) in the upper Snake River drainage in Idaho will be developed (wildlife plans). The wildlife plans will take into consideration wildlife losses, along with current needs, and management goals and programs for affected wildlife species.

Phase I Facilities:	Palisades Dam, South Fork of the Snake River ; Idaho.
Phase II Facilities:	Black Canyon Dam, Payette River, Idaho. Anderson Ranch Dam, South Fork of the Boise River, Idaho. Boise Diversion, Boise River, Idaho.

Obligation Plan:

FY-86	FY-87	FY-88	FY-89
Yes	Yes	No	No

Work Plan and Milestones:

1. Begin: December 1985; completion scheduled for December 1986.

2. Select target wildlife species.

3. Identify needs, and management goals and plans for target species.

4. Develop goals and objectives for the protection, mitigation, and enhancement of target wildlife species.

5. Recommend actions to protect, mitigate, and enhancement wildlife affected by hydroelectric development and operation.

86-74 Grand Coulee Wildlife Mitigation Planning -Measure 1004(b) (2) & (3); Project Manager, J. Meyer

Inundation and water level fluctuations at Grand Coulee Dam on the Columbia River in Washington has affected wildlife and wildlife habitat. The study will provide an estimate of the effect of construction and operation of the facility on wildlife, establish wildlife protection, mitigation, and enhancement goals, and will result in recommendations to protect, mitigate, and enhance affected wildlife species.

Obligation Plan:

FY-86	FY-8 7	FY-88	FY-89
Yes	No	No	No

Work Plan and Milestones:

1. Begin: October 1985; completion scheduled for September 1986.

2. Estimate the effects of Grand Coulee hydroelectric project on wildlife.

3. Identify target wildlife species for protection, mitigation, and enhancement.

4. Develop protection, mitigation, and enhancement goals and objectives for the target wildlife species.

5. Develop recommendations to protect, mitigate, and/or enhance the target wildlife species.

40.5 UPON COUNCIL APPROVAL, IMPLEMENT MITIGATION PLANS AND LAND ACQUISITION PROPOSALS. [SECTION 1004(b)(4) AND (5), 1004(d)(1) and (2).1

A. Action Item Budget Summary: ($ x 1.000)

FY-86	FY-8 7	FY-88	FY-89
640	2,290	2,990	1,420

B. Projects:

Ongoing :

84-38 Ural-Tweed Bighorn Sheep, Wildlife Mitigation Project - Measure 1004(b)(4); Project Manager, J. Meyer

84-39 Ural-Tweed Bighorn Sheep, Wildlife Mitigation Project - Measure 1004(b)(4); Project Manager, J. Meyer

Important segments of the Ural-Tweed bighorn sheep spring and winter range have been lost due to hydroelectric development and subsequent flooding from impoundment of the Kootenai River by Libby Dam. The resulting formation of Lake Koocanusa inundated approximately 4,350 acres of crucial winter and spring ranges. The primary objectives of these projects are to improve existing habitat conditions by developing new grass stands and rejuvenating existing grass and shrub stands that are in poor condition, and to monitor treatment and herd response. The product of this project will be an increase in the capacity of spring and winter range to support bighorn sheep.

Obligation Plan:

FY-86	FY-87	FY-88	FY-89
Yes	Yes	Yes	No

Work Plan and Milestones:

1. Begin: January 1985; completion is scheduled for December 1988

2. Enhance approximately 1300 acres of sheep range by developing new grass stands and rejuveniating existing grass and shrub stands that are in poor condition.

3. Evaluate the effectiveness of the habitat improvement projects in enhancing bighorn sheep and their habitat.

C. New Projects:

86-11 Libby Dam Wildlife Mitigation - Measure 1004(b)(4); Project Manager, J. Meyer

Under this project mitigation and enhancement efforts will be initiated for key wildlife species adversely affected by development and operation of Libby Dam on the Kootenai River in Montana. Approximately 28,000 acres of diverse wildlife habitat was inundated by construction of Libby Dam. The project will focus primarily on improving, enhancing, and protecting remaining habitat for the affected wildlife species.

Obligation Plan:

FY-86	FY-87	FY-88	FY-89
Yes	Yes	Yes	No

Work Plan and Milestones:

1. Project will be initiated following adoption of the wildlife mitigation plan for Libby by the Council.

2. Activities to be initiated will be based on priorities identified in the mitigation plan.

56-58 Hungry Horse Dam Wildlife Mitigation - Measure 1004(b)(4); Project Manager J. Meyer

Under this project, mitigation and enhancement efforts will be initiated for key wildlife species adversely affected by development and operation of Hungry Horse Dam on the South Fork of the Flathead River in Montana. Aproximately 23,750 acres of diverse wildlife habitat was inundated by construction of Hungry Horse Dam, for which there was no wildlife mitigation. The project will focus primarily on improving, enhancing , and protecting remaining habitat for the affected wildlife species.

Obligation Plan:

FY-86	FY-87	FY-88	FY-89
Yes	yes	Yes	NO

Work Plan and Milestones:

1. Project will be initiated following adoption of the wildlife mitigation plan for Hungry Horse by the Council.

2. Activities to be initiated will be based on priorities identified in the mitigation plan.

41.1 IN CONSULTATION WITH MONTANA DEPARTMENT OF FISH, WILDLIFE AND PARKS AND THE U.S. FISH AND WILDLIFE SERVICE, CONTINUE ONGOING WORK AND SUBMIT A COORDINATED WORK PLAN TO THE COUNCIL BY MAY 1, 1985, FOR MEASURES TO BE IMPLEMENTED IN MONTANA BEFORE NOVEMBER 15, 1986. [SECTIONS 804(a)(2), 804(a)(3), 804(a)(6), 804(a)(9), 804(b)(l)(C), 804(b)(l)(D), 804(b)(3-6).]

A. Action Item Budget Summary: ($ x 1,000)

FY-86	FY-87	FY-88	FY-89
1,535	500	80	0

B. Projects:

81S-5 Effects of the Operation of Kerr and Hungry Horse Dams on the Reproductive Success of Kokanee in the Flathead System - Measure 804(a)(l-2); Project Manager, T. Vogel

Kokanee spawning incubation and early rearing has been affected in the South Fork and mainstem Flathead River by operation of Hungry Horse Dam. Kokanee production is also adversely affected by the operation of Kerr Dam in Flathead Lake. This project is designed to determine the effects of operation and make recommended changes to enhance the survival of kokanee.

Obligation Plan:

FY-86	FY-87	FY-88	FY-89
Yes	No	No	No

Work Plan and Milestones:

In 1982 BPA contracted with Montana Department of Fish, Wildlife, and Parks to monitor the effectiveness of the recommended flows from Hungry Horse to enhance Kokanee production. The final research report for the river portion of the study will be completed by September 30, 1985. Evaluation of the effectiveness of the recommended flows will continue through November 15, 1987. Quarterly and annual reports are provided. A final project report will be issued in November, 1987.

83-l Lower Flathead System Fisheries Study - Measures 804(a)(3) and 804(b)(6); Project Manager, T. Vogel

The project is designed to evaluate the impacts of the operation of Hungry Horse and Kerr Dam on the fisheries resources of the lower Flathead system including South Bay of Flathead Lake

Obligation Plan:

FY-86	FY-87	FY-88	FY-89
Yes	No	No	NO

Work Plan and Milestones:

This project with the Salish-Kootenai Tribe began in December of 1982. The impact of Kerr's present operational regime upon the success of trout and northern pike spawning and recruitment in the lower Flathead River is being documented. Monitoring of fish populations in lower Flathead Lake is also being done. The project will be completed December 30, 1987. At that time, an array of management/mitigation alternatives for the lower Flathead system will be proposed.

83-465 Quantification of Hungry Horse Reservoir Levels Needed to Maintain or Enhance Reservoir Fisheries - 804(b)(3); Project Manager, S. Smith

83-467 Quantification of Libby Reservoir Levels Needed to Maintain or Enhance Reservoir Fisheries - 804(h)(3); Project Manager, S. Smith

Investigators from the Montana Department of Fish, Wildlife, and Parks are studying the effects of drawdowns (water releases for power generation, flood control, or other water management activities1 on important game fish in the Libby and Hungry Horse reservoirs. Biologists are evaluating changes in the distribution of fish, their use of various reservoir zones, and timing of alterations of each zone's physical parameters as they relate to important life stages of the fish. These data will be used to predict the effects of hydro operations on resident fisheries and to recommend seasonal drawdown levels that are compatible with the needs of the fish.

Obligation Plan:

FY-86	FY-87	FY-88	FY-89
Yes	Yes	Yes	No

Work Plan and Milestones:

1. Begin model development September 1985. Continue data collection at projects.

2. Studies complete November 15.1986

3. Analysis of model results (to be done in cooperation with other interested entities) complete November 15.1987.

41.2 INITIATE DESIGN OF THE COLVILLE HATCHERY BY FISCAL YEAR 1986. BUILD THE HATCHERY IN FISCAL YEARS 1987-1988. [SECTION 804(e)(l5).]

A. Action Item Budget Summary: ($ x 1,000)

FY-86	FY-8 7	FY-88	N-89
Restricted Procurement Information			

B. Project:

85-38 Colville Hatchery - Measure 804(e)(l5); Project Manager, F. Holm

BPA is proceeding with the design and construction of a resident fish hatchery on the Colville Indian Reservation for stocking of reservation waters.

Obligation Plan:

N-86	N-8 7	N-88	N-89
Yes	Yes	Yes	Yes

Work Plan and Milestones:

A technical work group has been formed to provide input to the hatchery construction process. An intergovernmental agreement has been negotiated with the Colville Confederated Tribes and the pre-design phase is underway. The final design will be done in FY-86 with construction scheduled for N-87 and FY-88. Upon completion BPA will fund the 0 & M of the facility.

41.3 EVALUATE CURRENT ONGOING ACTIVITIES ON STURGEON. DEVELOP A WORK PLAN FOR FUTURE ACTION. SUBMIT TO THE COUNCIL BY MAY 1985. [SECTION 804(e)(8).]

A. Action Item Budget Summary: ($ x 1,000)

FY-86	FY-87	FY-88	FY-89
480	580	590	600

B. Projects:

83-316 White Sturgeon Early Life History Requirements and Genetic Study - Measure 804(e)(8); Project Manager, F. Holm

The project funded to the University of Washington is designed to determine the early life history requirements for white sturgeon using the laboratory facilities at the School of Fisheries. A genetic study, using the electrophoretic technique, is being done throughout the Columbia River system. This will determine what distinct populations, if any, must be considered if stock supplementation is selected as a mitigation and enhancement technique.

Obligation Plan:

FY-86	FY-87	FY-88	FY-89
Yes	Yes	Yes	Yes

Work Plan and Milestones:

This project was first funded in May, 1983 and has produced some early information on behavioral and habitat requirements for young white sturgeon. Hatchery techniques are being refined and a genetic study is being done. Project is scheduled to run through FY-89. Monthly and annual reports are submitted.

C. New Projects:

86-50 Sturgeon Habitat Assessment - Measure 804(e)(3)(8); Project Manager, F. Holm

One of the top priorities of the workplan for sturgeon research in the Columbia River Basin is an assessment of the habitat requirements and availability. RFP's will be developed for this research so project description(s) is/are yet to be defined.

Obligation Plan:

FY-86	EY-87	FY-88	FY-89
Yes	Yes	No	No

Work Plan and Major Milestones:

Begin in early FY-86. Actual project description and time lines are not yet defined.

86-51 Sturgeon Stock Assessment – **Measure** 804(e)(3)(8); Project Manager, F. Holm

One of the top priorities of the workplan for sturgeon research in the Columbia River Basin is to determine **the** status of **the stocks** in the descrete study areas as listed in **the** workplan. RFP's will **be** developed for this research so project description(s) is/are yet to **be** defined.

Obligation Plan:

FY-86	**FY-8 7**	FY-88	FY-89
Yes	Yes	No	No

Work Plan and Major Milestones:

Begin in early N-86. Actual project description and time lines are not yet defined.

41.4 COMPLETE CONSTRUCTION OF PEND OREILLE HATCHERY BY OCTOBER 1986. [SECTION 804(e)(5).]

A. Action Item Budget Summary: ($ x 1,000)

FY-86	FY-87	FY-88	FY-89
350	100	100	100

B. Projects:

84-19 Construction of the Cabinet Gorge Kokanee Hatchery - 804(e)(5); Project Manager, T. Clune

BPA and the Washington Water Power Co. are sharing the costs of constructing the facility. Idaho Fish and Game will fund the operation and maintenance. The hatchery will produce 20 million kokanee fry annually to enhance the fishing of Lake Pend Oreille which has been adversely impacted by Cabinet and Albeni Falls Dams and the introduction of mysis shrimp.

Obligation Plan:

FY-86	FY-87	FY-88	FY-89
Yes	**No**	No	No

Workplan and Milestones:

Construction ongoing, scheduled completion by November 1985 (one year ahead of schedule).

85-339 Kokanee Stock Status and Evaluation of the Cabinet Gorge Hatchery - 804(e)(5); Project Manager, F. Holm

A study has been funded for Idaho Department of Fish and Game to obtain base line data on the status of the kokanee population of Lake Pend Oreille.

Obligation Plan:

FY-86	FY-87	FY-88	FY-89	EY-90
Yes	Yes	Yes	Yes	Yes

Work Plan and Milestones:

The project was started in April 1985. The status of the kokanee population and food organisms will be determined in the next two years. After the Cabinet Gorge Hatchery begins releasing kokanee, the project will be directed towards an evaluation of the contribution of the hatchery to the fishery in Lake Pend Oreille.

41.5 DEVELOP A WORK PLAN FOR CLARK FORK FISHERY LOSS, INCLUDING AUGMENTING FLOWS IN THE BITTERROOT RIVER THROUGH A WATER PURCHASE IN PAINTED ROCKS RESERVOIR. SUBMIT IT TO THE COUNCIL IN MAY 1985. PROVIDE INTERIM FUNDING FOR FLOW AUGMENTATION UNTIL FUNDING IS PROVIDED BY THE MONTANA POWER AND WASHINGTON WATER POWER COMPANIES UNDER ACTION ITEM 41.14. [SECTION 804(e)(l), 804(e)(2), and 804(e)(ll).]

A. Action Item Budget Summary; ($ X 1,000)

FY-86	N-87	N-88	N-89
Restricted Procurement Information			

B. Projects:

83-463 Managing Water Releases for Painted Rock Reservoir - Measure 840(e)(l); Project Manager, F. Holm

The Montana Department of Fish, Wildlife, and Parks is conducting a feasibility study to prepare a water management plan for scheduling water releases at Painted Rock Reservoir in western Montana, to aid the movements of fish spawning on the Bitterroot River, a tributary of the Clark's Fork of the Columbia River. At present, trout production is limited by low water levels in the summer. In developing the plan, the Montana agency is monitoring many aspects of the Bitterroot River, including water temperature, stream discharge, and water quality. They are also analyzing the area's salmonid fish habitat and monitoring brown and rainbow trout spawning activities to better define trout population estimates and needs.

Obligation Plan:

FY-86	FY-87	FY-88	FY-89
Yes	No	No	No

Work Plan and Milestones:

The project, began June 15, 1983, will continue into early 1987. At that time a final water management plan for water releases from Painted Rocks Reservoir will be in place. The water purchase is being done on a temporary basis (through 1986) by MDFWP. They have gone to the FERC to request that Montana Power Company purchase the water in perpetuity.

Note: A Clark Fork fishery loss work plan is being developed by MDFWP and Washington Water Power. BPA has not been involved because the projects on the Clark Fork are privately owned.

41.6 INITIATE REMOVAL OF ACCUMULATED MATERIALS IN THE KOOTENAI RIVER, WHERE APPROPRIATE. [SECTION 804(d)(l).]

A. Action Item Budget Summary: ($ X 1,000)

FY-86	FY-87	FY-88	FY-89
Restricted Procurement Information			

B. Project: None

C. Future Projects:

88-6 Kootenai River Materials Removal - Measure 804(d)(l); Project Manager, F. Holm

Materials which have accumulated in the Kootenai River tributary deltas below Libby Dam as a result of the dam's construction and operation and which interfere with the migration of spawning fish are to be removed.

Obligation Plan:

FY-86	FY-87	FY-88	FY-89
No	No	Yes	No .

Work Plan and Milestones:

MDFWP's has concluded that work on this project is not required until 1988 at the earliest. No project in place at this time.

41.7 INITITATE ASSESSMENT OF IMPACTS OF THE CONSTRUCTION AND CURRENT OPERATION OF DWORSHAK DAM ON RESIDENT FISH. [SECTION 804(e)(12).1

A. Action Item Budget Summary ($ X 1,000)

FY-86	FY-87	F Y - 8 8	FY-89
Restricted Procurement Information			

B. Project: None

C. New Projects:

86-15 Assess the Impacts of the Construction and Current Operation of Dworshak Dam on Resident Fish - Measure 804(e)(12); Project Manager, F. Holm

The project would be designed to fulfill the requirements of the measure as listed in the title. However, the U.S. Army Corps of Engineers intends to fund a similar study. Until BPA evaluates their study proposal, no decision will be made as to the objectives and task of BPA's proposed project.

Obligation Plan:

FY-86	FY-87	FY-88	FY-89
Yes	Yes	Yes	No

Work Plan and Milestones:

Indefinite until the Corps of Engineers study is reviewed.

41.8 PREPARE AND SUBMIT TO THE COUNCIL AN ANNUAL REPORT ON RESIDENT FISH IMPLEMENTATION IN MAY.

BPA intends to carry out this task.

42.1 ALL FEDERAL PROJECT OPERATORS AND REGULATORS SHALL CONTINUE TO COORDINATE AND CONSULT, AS INDICATED IN SECTION 1304.

BPA will continue to coordinate and consult as indicated in Section 1304.

JBouck:tlh (WP-PJS-6329N)

APPENDIX A

LIST OF PROPOSED NEW PROJECTS

FOR BPA FUNDING IN FY-1986

IN SUPPORT OF ACTION ITEMS

*Implementation of this project assumes action by the NW Power Planning Council.

86-67	Marion Drain Screen Construction	15
86-69	Stevens/Naches Selah Screen Construction	15
86-70	Lower Columbia Projects Loss Study/Mit Plan	70
86-71	Dworshak Wildlife Loss Study/Mit Plan	71
86-73	Upper Snake Projs Wildlife Mit Plan	72
86-74	Grand Coulee Wildlife Mitigation Planning	73
86-75 (85-70)2/	Little Naches River Passage	23
86-76 (85-59)2/	Orofino Creek Passage	24
86-77	Lower Clearwater Habitat Survey	35
86-79 (85-79)2/	Fifteenmile Creek Basin Habitat Improvement	19
86-82	John Day Acclimation Pond	28
86-83 1/	Low Cost Small Scale Production Facility Survey	32
86-84 1/	Development and Testing of Smolt Indices	49
86-85 1/	Evaluation Smolt Indices & Hatchery Practices	49
86-86 1/	Improved Trans Tech for Outplanting Hat Fish	49
86-87 1/	Tech Info Transfer / Improved Hat Effectiveness	50
86-88 Status Creek	Screen/Ladder Construction	15
86-89	Upper Toppenish Ladder Construction	15
86-90 (84-26)2/	Little Fall Creek Fish Passage	19

1/ Implementation of this project assumes action by the NW Power Planning Council.

2/ Carryover projects identified for implementation in the FY1985 Work Plan but not funded during FY 1985.

JBouck:tlh (WP-PJS-6735N)

APPENDIX B

LETTERS OF COMMENT ON THE DRAFT ANNUAL WORK PLAN

FOR FY-1986

AND RESPONSES TO ISSUES RAISED IN LETTERS OF COMMENT

LETTER No. 1

United Statee Department of Agriculture
Forest Service
Region 1
Federal Building
P.O. Box 7669
Missoula, MT 59807

Reply to: 2610

Date: September 16, 1985

SEP 18 1985

Hr. John Palensky, Director
Division of Fish and Wildlife
Bonneville Power Administration
P.O. Box 3621
Portland, OR 97208

Dear Mr. Palensky:

We have reviewed your F.Y. 1986 Draft Implementation Work Plan for the Fish and Wildlife program and offer the following comments:

Issues

(1) The following statement should be added just before the last sentence of the summary paragraph on page 32:

Project 84-5 Red River/Crooked River.

"The Meadow Creek passage improvement project will be implemented in F.Y. 1986. This project will allow access to approximately 20 miles of stream presently not available to spring chinook and summer steelhead." (1)

Thank you for the opportunity to comment.

Sincerely,

Barbara Bolder

BARBARA BOLDER
Director of Wildlife and Fisheries

BPA Responses to Issues Raised by the
U.S. Dept. of Agriculture, Forest Service
in LETTER NO. 1

Letter No. 1, Issue No. 1

BPA accepts this statement; Meadow Creek is a tributary project on the South Fork Clearwater River implemented in 1984 by agreement with the Net Perce National Forest. BPA will seek State of Idaho acceptance for passage projects that potentially impact resident fish.

LETTER NO. 2

SEP 18 1985

DEPARTMENT OF THE ARMY
NORTH PACIFIC DIVISION. CORPS OF ENGINEERS
P.O. BOX 2870
PORTLAND. OREGON 97208-2870

REPLY TO
ATTENTION OF

September 16, 1985

Environmental Resources

Mr. John R. Palensky
Director
Division of Fish and Wildlife
Bonneville Power Administration
P. 0. Box 3621
Porland, Oregon 97208

Dear Mr. Palensky:

This is in response to your request for comments on BPA's draft FY86 Implementation Work Plan for the Columbia River Basin Fish and Wildlife Program. We are particularly pleased with your initiative in proposing the much needed work in the fish health area. We believe that fish disease work having early application to improved quality of juvenile migrant salmon and steelhead is of the highest priority.

The ongoing, high cost efforts to upgrade juvenile fish passage facilities will be seriously compromised until there is a major decrease in the proportion of heavily diseased migrants released from existing hatcheries. The ability of hatchery fish to survive to the adult phase must be dramatically improved, and soon, if we are to realize full benefits from investments in hatcheries and passage facilities.

We particularly support your proposed work on bacterial kidney disease (BKD) and infectious hematopoietic necrosis (IHN), two diseases that are adversely impacting juvenile salmon and steelhead survival rates at this time. It is recognized that the Power Council Fish and Wildlife Program currently tends to constrain new fish disease work. However, the need for early applied work on these two specific diseases is so overwhelming, it should be possible to enlist the early support of all involved parties. We urge you to proceed on this matter.

Please find enclosed other miscellaneous comments on your draft Work Plan. The opportunity to review this draft is sincerely appreciated.

Sincerely,

James R. Fry
Colonel, Corps of Engineers
Deputy Division Engineer

Enclosure

Issues)

(1)

NORTH PACIFIC DIVISION
CORPS OF ENGINEERS

STAFF COMMENTS
DRAFT FY86 WORK PLAN FOR POWER COUNCIL FISH AND WILDLIFE PROGRAM

Issues

1. Page 4. In a letter dated September 4, 1985, the fisheries agencies and Tribes requested additional flume tests in 1986. The Corps has not programmed funding for the tests and it is doubtful we will be able to carry them out. It appears that your Project 86-47 would be an appropriate vehicle to continue this effort if it is judged necessary. We will be available to discuss this matter further with you. (2)

2. Page 7. The Corps is presently preparing its spill monitoring plan that will involve hydroacoustic monitoring at many of its mainstem Columbia and Snake projects in 1986. Before Project 85-83 is funded, we ask that you coordinate your efforts with this office so that we avoid any duplication. (3)

3. Page 45. In regard to Project 85-69, the John Day acclimation ponds are not to mitigate for John Day Dam. That was accomplished by the Corps through expansion of Spring Creek and Bonneville Hatcheries. It is our understanding that the acclimation ponds are a part of the system stock selection and release site reprogramming efforts. This should be clarified in the final Work Plan. (4)

BPA Responses to Issues Raised by the
US Army Corps of Engineers
in LETTER NO. 2

Letter No. 2, Issue No. 1.

BPA wishes to discuss with the Corps of Engineers the possibility of cost-sharing any further research efforts in this area. BPA intends to involve the Corps in the initial scoping process when qualifying further research needs and priorities.

Letter No. 2, Issue No. 2

BPA agrees with this statement.

Letter No. 2, Issue No. 3

BPA will coordinate it's scope of work for smolt monitoring, including Project 85-83 with the Corps of Engineers.

Letter No. 2, Issue No. 4

The reference to the John Day Acclimation Ponds to mitigate effects from the John Day dam operation has been deleted.

LETTER NO. 3

IN REPLY REFER TO

United States Department of the Interior

6522 (932.2)
BPA/FWPI

BUREAU OF LAND MANAGEMENT

OREGON STATE OFFICE
P.O. Box 2965 (825 NE Multonmah Street)
Portland Oregon 97208

SEP 20 1985

John R. Palensky, Director
Division of Fish and Wildlife
Bonneville Power Administration
P. 0. Box 3621
Portland, Oregon 97208

Dear Mr. Palensky:

We have reviewed your FY 1986 Draft Implementation Work Plan for the Columbia River Basin Fish and Wildlife Program as requested in your letter of August 29, 1985.

The format for the Fiscal Year 1986 Implementation Plan was well organized and easily understood. We have no substantive comments for its improvement.

Bureau involvement with BPA-funded projects under the Council's Columbia River Basin Fish and Wildlife Program in Oregon has been in the John Day Basin to date. Habitat enhancement work in-the South Fork John Day River will continue in FY 1986 (Project 85-71). We will also be involved to some extent with continued efforts to provide fish passage at Enloe Dam (Project 83-477) on the Similkameen River in FY 1986.

We have enjoyed a good working relationship with your staff and appreciate the opportunity to comment on the draft FY 1986 Implementation Plan.

Sincerely,

Robert E. Metzger

Robert E. Metzger
Acting Deputy State Director for
Lands and Renewable Resources

BPA Responses to Issues Raised by the
Bureau of Land Management
in LETTER NO. 3

No issues raised

LETTER NO. 4

PNUCC

PACIFIC NORTHWEST UTILITIES CONFERENCE COMMITTEE

SEP 26 1985

September 26, 1985

Mr. John Palensky, Director
Division of Fish and Wildlife-PJ
Bonneville Power Administration
1002 N.E. Holladay
P.O. Box 3621
Port land, Oregon 97208-362 I

Dear Mr. Palensky:

Attached are PNUCC's comments on BPA's Plans for Implementing the Columbia River Basin Fish and Wildlife Program in Fiscal Year 1986. If you have any questions on our comments, please contact Pam Barrow at PNUCC.

Thank you for the opportunity to comment on your plan.

Very truly yours,

Pam Barrow

for Diana E. Snowden
Executive Director

PB:gh: I57MM- I
Attachment

PNUCC COMMENTS ON BPA FY-86 IMPLEMENTATION PLAN

32. I TEST AND EVALUATE AN ALTERNATIVE CONDUIT SYSTEM FOR JUVENILE FISH BY NOVEMBER 15, 1986. REPORT RESULTS TO THE COUNCIL BY JANUARY 1987. [SECTION 404(c)(3).]

Issues)

86-47 Evaluate and Test Alternate Bypass Conduit Desiqns

PNUCC believes that BPA should sponsor a workshop in early I986 to review activities and needs in this area. All project owners/operators should be involved and any necessary activities for BPA funding can be identified at the meeting. (1)

33. I CONTINUE TO IMPLEMENT WATER BUDGET MEASURES, INCLUDING FUNDING OF WATER BUDGET MANAGERS AND TRIBAL COORDINATION EXPENSES. [SECTIONS 304(a)-(c). I

83-49 I Water Budqet Manaqer: Columbia Basin Tribes

83-536 Water Budqet Manaqer: Federal and State Fish and Wildlife Agencies

As PNUCC has stated in previous comments to BPA, we believe that all monitoring, analysis, and studies designed for verification of the water budget should be performed in an open process with input from all involved parties. The activities of the Water Budget Managers are separate functions from all smolt monitoring and verification studies. (2) (3)

33.2 CONTINUE TO FUND RESEARCH AND MONITORING. REPORT ON ACTIVITIES BY NOVEMBER OF EACH YEAR. [SECTION 304(d).]

80-I Smolt Monitorinq Proqram 304(d)(I&2)

80-60 Downstream Miqrant Monitorinq

86-48 Effect of Short-Term Flow Fluctuations on Smolts 304(d)(l)

PNUCC supports present BPA efforts to form a steering committee comprised of all involved parties to develop and oversee the research and monitoring programs for water budget research and monitoring activities. PNUCC strongly supports an open process in which all involved parties will participate in the determination of study needs and study designs for the above projects. (4)

81-I **Flow and Spill Requirements for Jwenile Fall and Summer Chinook Salmon in John Day Reservoir 304(d)(I)**

This study presumes that water flow is the problem. Any study to determine why fish hold up at John Day Reservoir should look at all reservoir conditions since it has been documented that O-age migrating fish generally don't respond to flows. This study, however, only looks to relating flows to passage time and survival.

(Issues 5)

86-48 **Effect of Short-term Flow Fluctuations on Smolts**

PNUCC does not support funding for this project. The 1985 Water Budget activities recognized concerns regarding low weekend flows. A system of minimum flows based on average weekly flows was established and is operating successfully. Only the power impacts of this regulation are yet to be evaluated and PNUCC believes that such impacts should be studied.

(6)

34.5 DEVELOP AN ANNUAL WORK PLAN FOR SUBMISSION TO THE COUNCIL BY SEPTEMBER I5 OF EACH FISCAL YEAR FOR IMPLEMENTATION OF SECTION 704(d). PREPARE AND SUBMIT TO THE COUNCIL AN ANNUAL REPORT ON ACTIVITIES IN OCTOBER.

General Comments

I. **BPA should not become involved in water resource development projects. Such involvement is contrary to the provisions of the Northwest Power Act (Section 4(h)) since there are other agencies whose responsibility it is to deal with the problems of inadequate streamflows which result from irrigation withdrawals and over appropriation. BPA should discontinue its involvement in these projects and in other water quality projects not associated with hydroelectric impacts. These should be addressed by the agencies that have been delegated such responsibility. Section 4(h)(8)(A) was not intended as an open door to BPA funds to solve all the water quality and quantity problems in the Northwest under the guise of off-site enhancement. Sections 4(h)(8)(C) and 4(h)(IO)(A) place clear limitations on these BPA expenditures.**

(7)

(Issues

2. Projects which are controversial and require agency plan approvals before implementation should have all permits and plan approvals in final form before any further BPA funds are spent. This will preclude BPA from spending ratepayer funds prematurely or in vain. The White River Falls Passage Project (83-450) exemplifies the problems posed by this situation. The BPA Implementation Plan for FY86 has six additional projects designed to provide passage around natural obstacles. These are: #84-26, 83-341, 85-7 I, 85-70,84-6,84-3 I, and 85-59. BPA should delay further funding of these projects until the necessary agencies' approvals are in hand. (8)

3. Approximately one quarter of BPA's Fish and Wildlife budget for FY86 (about $I I million) is directed at solving fisheries problems that are not related to the effects of hydroelectric development. However, the hydroelectric impacts for which these projects are providing off-site mitigation are not even identified yet. PNUCC is concerned that there are no mechanisms in place for crediting these ratepayer expenditures against hydroelectric impacts or fish goals, either in terms of dollars or smolts produced. PNUCC recommends that BPA complete the ongoing projects (with the exceptions noted below under individual projects) and not fund any new off-site projects until a mechanism for crediting these expenditures against identified hydroelectric impacts is established. (9)

4. Pre- and post-project evaluation is necessary to determine the effectiveness of projects and their actual costs, both capital and O&M. The purposes of these evaluations are to learn: how well enhancement techniques work under what conditions; how many additional smolts are produced; and how much ratepayers may expect to pay to achieve these results. The evaluations should be conducted by independant, third-parties, not by. BPA or involved agencies. This condition will assure that problems are realistically assessed and that they may be avoided in the future. In this way the region's enhancement methods can be adapted to provide the most cost-effective compensation. PNUCC recommends that BPA complete the ongoing projects (with the exceptions noted below under individual projects) and not fund any new projects until an independent third party has evaluated the successes and failures of the current projects. (10)

Specific Comments

84-26 Little Fall Creek Fish Passage

85-7 I South Fork John Day Habitat Enhancement Izee Falls Fish Passage

(Issues

BPA should delay further funding of these projects until the necessary permits and agency approval of the plans are received (see General Comment 2). (11)

86-16 Umatilla Habitat Improvement

86-56 Fish Passage Improvements at Major Umatilla River Water Diversions Above Three Mile Falls Dam

PNUCC recommends that these two projects (86- I6 and 86-56) not be funded at the present time.- The Draft Umatilla Comprehensive Plan indicates that low stream flows due to irrigation withdrawals is the main factor limiting fish productivity in the basin. Furthermore, the Plan's estimates of fisheries benefits from these projects are unlikely to be cost effective in the absence of flow augmentation. For these reasons, we urge that BPA delay the start of new projects in the Umatilla Basin until the necessary arrangements are in place to ensure adequate in-river flows. (12)

83-436 Three Mile Diversion Dam Fish Passage Facilities

PNUCC recommends that BPA delay further funding of this project until the necessary arrangements have been made to ensure adequate in-river flows. This appears to be an appropriate time, as little work has been done on the final designs. (13)

83-477 Enloe Dam Passage 704(e)(I)

PNUCC has recently received a copy of the Enloe Dam Passage Project Annual Report, I984 and will be submitting comments to BPA. (14)

85-70 **Little Naches River Passage**
84-6 & **Lolo/Croked fork, El Dorado Creeks**
84-3 I
85-59 **Orofino Creek Passage**

Issues)

PNUCC recommends that BPA delay further funding of these projects until any necessary agency plan approvals or permits are received. (See General Comment 2.) **(15)**

83-7 **Idaho Habitat Evaluation for Offsite Mitigation**

While this appears to be an excellent project that should be funded, PNUCC urges that project evaluations be conducted by independent, third-parties. (See General Comment 4.) (16)

83-415 **Alturas Lake Creek Upper Salmon River Flow Augmentation**

From the description it is unclear what is being proposed in this project. However, it appears that some sort of water development project may be involved as a solution to low in-river flows. PNUCC opposes BPA funding for any water development project work. (See General Comment I.) (17)

84-28 **Lemhi River Feasibility Study**

It is not appropriate for BPA to fund water resource development studies, as these are beyond BPA's responsibility. (See General Comment I .) (18)

84-29 **Panther Creek Habitat Feasibility**

Toxic mine drainage is a problem that is clearly addressed under the Clean Water Act and as such is the responsibility of agenciesother than BPA. As the feasibility study is complete, BPA should discontinue funding for this project. **(19)**

85-61 **Habitat Evaluation and Monitoring**
85-62 **Habitat Evaluation and Monitoring**

WhilePNUCC supports the evaluation and monitoring of fish and wildlife projects, it is inappropriate for contractors to evaluate themselves. These projects should be defined in greater detail and contracted to independent, third-parties. (See General Comment 4.) (20)

34.1 I OPERATE AND MAINTAIN JUVENILE RELEASE AND ADULT COLLECTION AND HOLDING FACILITIES ON THE UMATILLA RESERVATION. [SECTION 704(i)(I).]

83-435 Minthorn Springs Creek Summer Steelhead Juvenile Release and Adult Collection Facility 704(i)(1)

(Issues)

In the spirit of adaptive management, PNUCC urges that an evaluation task be added to this project. The evaluation should be done by an independent third party and should examine the facility's success in meeting objectives, any operational problems, possible solutions, and actual costs for construction and operation. Evaluation of past investments will provide useful insight for guiding future investments. (21)

34.13 JOHN DAY ACCLIMATION FACILITY: COMPLETE CONSTRUCTION OF TEMPORARY FACILITIES [PLAN BY AGENCIES AND TRIBES] BY SPRING 1986. [SECTION 704(i)(2). I

85-69 John Day Acclimation Pond 704(i)(2)

At the Council's June 26, 1985 meeting, the Council determined that Council review would be needed prior to final site selection and initiaton of design and engineering. The work plan and milestones should include a step for submission of proposed sites to the Council for review and approval. (22)

34.16 REPORT ON THE STATUS OF STUDIES TO DEVELOP LOW CAPITAL PRODUCTION FACILITIES BY JULY 1985. FUND NO MORE STUDIES UNDER THIS MEASURE PRIOR TO REPORT. [SECTION 704(j)(I).]

86-83 Status Report an Low Capital Facilities in the Columbia Basin

The purpose ". . . [to] identify and describe those [low capital facilities] which are in the Columbia Basin . . " sounds like a repeat of what was accomplished by BPA's recently published Compendium of Low-Cost Pacific Salmon and Steelhead Production Facilities and Practices in the Pacific Northwest (October, 1984). There is no need for further identification and description of low capital facilities. Effort should be directed toward applying the information in the Compendium to assist in identifying where these types of facilities might be built in the Columbia Basin. (23)

PNUCC recommends deleting identification and description of facilities. The project should proceed directly to a determination of where these facilities might be built. With these corrections, this study would provide a logical next step in building on BPA's work to produce the Compendium. In addition, a better definition of "low capital" facility is needed. The stated criteria are overly limiting. There are facilities which should be included that may produce more than 10,000 lbs. of fish which are still "low cost" facilities. (Issues)

34.23 EVALUATE ONGOING WORK UNDER 704(h) AND SUBMIT A WORK PLAN TO THE COUNCIL FOR FUTURE EFFORTS BY OCTOBER 1985. [SECTION 704(h)(92). I

86-19 Prevention of IHN Disease 704(h)(2)(D)

86-23 Prevention of Bacterial Kidney Disease 704(h)(2)(D)

PNUCC agrees with the Pacific Northwest Fish Health Protection Committee (PNFHPC) that Bacterial Kidney Disease (BKD) and Infectious Hematopoietic Necrosis (IHN) pose a serious threat to salmonid health and survival. We are concerned that the increased mortality caused by these diseases will adversely impact efforts to mitigate salmon and steelhead losses. While we understand and agree with the Council's decision to refrain from approving new 704(h) research projects for BPA funding, we believe that the gravity of these disease problems necessitates BPA funding for projects 86-19 and 86-23. (24)

86-24 Anadromous Fish Health Monitorinq in Idaho 704(h)(2)(D)

86-53 Anadromous Fish Health Monitorinq in Oreqon 704(h)(2)(D)

86-54 Anadromous Fish Health Monitorinq in Washinqton 704(h)(2)(D)

PNUCC does not support BPA funding for projects 86-24, 86-53, and 86-54. BPA is currently funding epidemiological studies which will collect much of this information. Moreover, the responsibility for monitoring the ongoing incidence and severity of diseases and for preserving, retreiving, and analyzing fish health data appropriately resides with the fisheries agency responsible for managing the fish production facility and/or fishery. (25)

86-57 Comprehensive, Integrated, Size and Time of Release Evaluation 704(h)(2)(B)

86-13 Development and Testing of Smolt Indices 704(h)(2)(F)

86-83 Evaluation of Smolt Indices and Hatchery Pratices 704(h)(2)(A)

(Issues)

PNUCC does not support BPA funding for projects 86-57, 86-l 3, and 86-83 in FY 86. We believe that objectives and criteria should be established before these types of studies are considered for funding. (26)

86-84 Improved Fish Transportation Technology in Outplanting Hatchery Fish 704(h)(2)(A)

PNUCC does not support BPA funding for project 86-84 in FY 86. We believe that disease is a major factor in transportation-related mortalities and that priority should be given to projects which are designed to solve disease problems. (27)

86-14 Technical Information Transfer for Improving Hatchery Effectiveness 704(h)(2)(B)

PNUCC does not support BPA funding for project 86-14. While BPA has a responsibility to fund research aimed at improving hatchery effectiveness the responsibility to communicate and implement the results of this research at the fishery management and hatchery level does not lie with BPA. This is the responsibility of the fisheries agencies who manage the production facilities. BPA is only obligated to make the results of the research that it funds available to the agencies and the public. The fisheries agencies may consult with BPA on how communication and implementation may be accomplished, but BPA funding for the proposed 86-14 activities is clearly inappropriate. (28)

34.24 SUBMIT A WORK PLAN FOR FUNDING SUPPLEMENTATION STUDIES BY OCTOBER 1985. [SECTION 704(k)(l).]

86-62 Hatchery Supplementation

PNUCC has a number of concerns with this proposal:

- o It falls under the moratorium on new research projects until the Council adopts research objectives; (29)

- o It has the potential to become a very large and expensive project;
- o There is no work plan yet for funding supplementation studies, which hopefully will provide better definition of goals and objectives for this proposal;
- o There appears to be some overlap with the Willamette Basin Study Plan (Action Item 34.25); and
- o Several important issues have not been addressed, namely harvest management strategies to minimize the effects on the supplemented populations, and controls to limit the spread of fish disease from hatchery stocks.

Issues

For these reasons PNUCC recommends not funding this type of research until the above concerns have been addressed.

34.27 FUND AN EVALUATION OF HATCHERY FISH RELEASE SITES AND LEVELS OF RELEASE COMPATIBLE WITH NATURAL PROPAGATION AND HARVEST MANAGEMENT BY OCTOBER 1985. [SECTION 704(g)(1).]

86-63 Evaluation of Hatchery Fish Release Sites 704(g)(1)

PNUCC encourages the careful evaluation of the implications of reprogramming lower river hatchery fish to upriver sites prior to initiating such hatchery releases. Some of the problems that must be considered are included in this project. (30) Emphasis should be placed on the technical issues of insuring that transferred fish are free of disease; that they are adapted to the area where they would be introduced; that the implications of genetic mixing and competition between the introduced fish and wild fish are understood; and that seeding densities, including spawning and rearing densities, in the area slated for introduction are known.

The development of strategies for reprogramming will also require a clear statement of the intended harvest and management objectives for the introduced stocks. For example, the objective may be to increase meat harvest, or to establish a natural spawning population. The impact of a strategy for increased

harvest on existing wild/natural stocks also needs to be investigated. The management objective will ultimately determine the strategy of reprogramming.

34.28 UPON APPROVAL OF A REPROGRAMMING PLAN, FUND HATCHERY RELEASES IN THE UPPER COLUMBIA TO ASSIST IN RESTORING NATURALLY SPAWNING STOCKS. [SECTION 704(g)(2).]

Issues)

87-21 Reprogrammed Hatchery Releases 704(g)(2)

Reprogrammed hatchery releases should not be implemented until the technical issues listed in 34.27 are resolved, and a reprogramming plan that includes the management and harvest objectives for the introduced stocks and existing wild/natural stocks are established. (31)

35.2 IF NEW RESERVOIRS ARE CONSTRUCTED, DEDICATE SPECIFIC PORTIONS OF STORAGE TO PROTECT, MITIGATE, AND ENHANCE FISH AND WILDLIFE [SECTION 704(b)(16).]

BPA's stated intention to carry out this task may be a misinterpretation of this action item. Measure 704(b)(16) indicates that the responsibility for implementation belongs with the project operators and regulators. PNUCC questions BPA's role in this activity and asks for a more detailed explanation of BPA's activities and authorities with respect to dedication of storage water.. (32)

35.6 DEVELOP NEW DESIGNS FOR TURBINE INTAKE SCREENS. PROPOSE STUDY DESIGN TO THE COUNCIL BY JANUARY 1987. COMPLETE TESTS AND REPORT TO THE COUNCIL BY JANUARY 1989. [SECTION 1204(d)(1).]

86-46 Develop Alternate Small Hydroelectric Turbine Intake Screen Designs

This project apparently proposes to evaluate existing new screen designs and to design and test additional screens. However, the proposed work plan does not indicate any evaluation activities. PNUCC expressed concern with this action item in our comments on the Fish and Wildlife Program Amendments (Volume 4, page 13-16, August 1984). There has been no justification for spreading the costs of such studies over the region. The responsiblity for mitigation is on the specific (33)

project developer under Section 4(h)(10)(A) of the Regional Act. Therefore, the costs should be born by the developer if it is determined to be appropriate during the regulatory process.

39.1 **CONTINUE ONGOING WORK FUNDED UNDER THE FOLLOWING MEASURES UNTIL THE COUNCIL HAS ESTABLISHED RESEARCH OBJECTIVES (ACTION ITEM 39.3). NO NEW RESEARCH PROJECTS UNDER THESE MEASURES SHALL BE FUNDED IN FISCAL YEAR 1985 UNTIL ESTABLISHMENT OF THOSE OBJECTIVES.**

(Issues

PNUCC agrees that no new research projects should be funded until the Council has established research objectives, except for projects 86-19 and 86-23, discussed under action item 34.23. (34)

40.2 **FUND LOSS STATEMENTS AS NEEDS ARE IDENTIFIED. [SECTION 1004(b)(2).]**

48.4 **WHERE APPROPRIATE, DEVELOP MITIGATION PLANS [SECTION 1004(b)(3) and (5), 1004(d)(1) and (2).]**

General Comments:

PNUCC is seriously concerned about the value of many of the loss statements we have seen to date. We believe that all ongoing loss statements should be carefully evaluated to determine whether the product documents contribute information of sufficient value to justify the funding levels. This evaluation should be conducted prior to any funding of new loss statements. (35)

Specific Comments on New Projects:

86-64 **Willamette River Projects Wildlife Mitigation Plan 1004(b)(3)**

PNUCC submitted comments to BPA on the proposed work statement for the Willamette Basin Federal Projects Wildlife Mitigation Plan on August 14, 1985. A copy of the letter is attached. To summarize the comments in the letter, PNUCC does not support BPA funding of Mitigation Plans at these projects. The state and federal fish and wildlife agencies did not propose wildlife mitigation at the Willamette projects in spite of at least two past opportunities under the Fish and Wildlife Coordination Act. This lack of past concern by the agencies, combined (36)

with recent population trends and present harvest management in the Willamette Basin suggests that the projects did not seriously impact wildlife populations in spite of losses of habitat. Hydro system impacts, appropriate for BPA mitigation funding, are not specifically demonstrated. We continue to support the Corp's approach of good stewardship on a project-specific basis.

(Issues

86-70 Lower Columbia Projects Wildlife Loss Study 1004(b)(2)

PNUCC submitted comments to BPA on the proposal for conducting wildlife loss assessments on the lower Columbia projects on June 17, 1985. A copy of the letter is attached. To summarize the comments in the letter, PNUCC does not support BPA funding of loss assessments for the four projects. corps funded project-specific wildlife mitigation programs, based on recommendations from the fish and wildlife agencies under the Fish and Wildlife Coordination Act, are complete or in progress at these projects. National Wildlife Refuges or state wildlife management areas have been or will be provided in association with each project. Additional project lands are being managed for wildlife by Corps biologists. We believe that project-specific mitigation will be complete upon completion of these projects. (37)

86-71 Dworshak Wildlife Mitigation Planning 1004(b)(2) and (3)

PNUCC submitted comments to BPA on the formation of a work group to negotiate wildlife mitigation for Dworshak Dam on July 9, 1985. A copy of the letter is attached. PNUCC continues to support the work group approach for identifying mitigation requirements at Dworshak, as opposed to developing a loss statement. (38)

86-73 Upper Snake Projects Wildlife Mitigation Plan 1004(b)(3)

PNUCC has not hod the opportunity to comment on the Upper Snake River projects. Our preliminary policy on these projects is as follows:

Palisades and Anderson Ranch Dams: Part of the authorized purposes of these projects was for fish and wildlife. However, the Bureau of Reclamation has taken little or no action to fulfill thisobligation nor have recommendations from the fish and wildlife agencies been implemented by the Bureau. PNUCC, therefore, (39)

believes that wildlife mitigation at these projects is the responsiblity of the Bureau of Reclamation and that funding requests for wildlife projects should be directed to the Bureau. PNUCC does not support BPA funding for mitigation planning at these projects.

Black Canyon and Boise Diversion: These projects are 6 I and 77 years old. Conditions have changed considerably since the dams were constructed. Boise Diversion, for example, was not authorized for hydro until after the dam was completed for other purposes and has no hydro facility at this time. Due to urban development since project construction, it is now located adjacent to the city of Boise. PNUCC believes that no legitimate hydro impacts on wildlife can be identified and will not support any BPA funding of wildlife mitigation at these projects. Issues)

86-74 Grand Coulee Wildlife Mitiqation Planninq 1004(b)(2) and (3)

PNUCC submitted comments to BPA on the proposal for a Wildlife Mitigation Plan for Grand Coulee Dam on July 29, 1985. A copy of the letter is attached. PNUCC continues to support the work group negotiation of wildlife mitigation needs at Grand Coulee, as opposed to developing a loss statement, and supports funding the mitigation plan as conditioned in the letter. (40)

40.5 UPON COUNCIL APPROVAL, IMPLEMENT MITIGATION PLANS AND LAND ACQUISITION PROPOSALS. [SECTION 1004(b)(3) and (5), 1004(d)(1) and (2).]

84-38 Ural-Tweed Biqhorn Sheep, Wildlife Mitigation Project 1004(b)4
84-39 Ural-Tweed Biqhorn Sheep, Wildlife Mitiqation Project 1004(b)4

The on-going Ural-Tweed Bighorn Sheep projects should be credited as a part of the total Libby Dam Mitigation Plan (see 86-l I, below) since these projects are directly associated with the impacts of Libby Dam. (41)

86-l I Libby Dam Wildlife Mitiqation 1004(b)(4)

86-58 Hunqry Horse Dam Wildlife Mitigation 1004(b)(4)

The mitigation plans for Libby and Hungry Horse Dams are not yet completed and available for public review. Therefore, PNUCC cannot comment on the plans at (42)

this time. The reports will be carefully reviewed when they become available. Due to the expected costs of the mitigation programs, we believe that the plans should be submitted as amendments to the Council's program so that adequate public review can be provided through the amendment process.

41.3 EVALUATE CURRENT ONGOING ACTIVITIES ON STURGEON. DEVELOP A WORK PLAN FOR FUTURE ACTION. SUBMIT TO THE COUNCIL BY MAY 1985. [SECTION 804(e)(8).]

Issues)

86-50 Sturgeon Habitat Assessment 804(e)(3)(8)

86-51 Sturgeon Stock Assessment 804(e)(3)(8)

While PNUCC recognizes that hydroelectric development has had some effects on sturgeon in the Columbia Basin, the nature and extent of those effects are unknown. The sturgeon research work plan which is being developed by BPA is a worthy effort, but does not appear to address the issue of hydroelectric impacts and the resulting ratepayer obligations. As PNUCC pointed out -in comments on the Fish and Wildlife Program Amendments (Volume 4, page B-41, August 1984), the benefits of basic research extend beyond hydroelectric system concerns and provide information for proper sturgeon management. This is a fishery agency responsibility which exists even in the absence of a hydroelectric system. It is inappropirate for BPA to fund the entire cost of the type of basic research proposed in these two projects. (43)

41.7 INITIATE ASSESSMENT OF IMPACTS OF THE CONSTRUCTION AND CURRENT OPERATION OF DWORSHAK DAM ON RESIDENT FISH. [SECTION 804(e)(12).]

86-15 Assess the Impacts of the Construction and Current Operation of Dworshak Dam on Resident Fish

PNUCC believes that it isappropriate for BPA to withhold decision on this project until it has evaluated the Corps' proposed Dworshak resident fish project. The projects are potentially very similar. PNUCC will not support a duplicative effort. (44)

BPA Responses to Issues Raised by the
PNUCC
in LETTER NO. 4

Letter No 4, Issue No. 1

BPA intends to organize a technical workgroup on downstream fish passage to recommend overall direction. The scoping process will qualify further research needs and identify possible funding amounts.

Letter No. 4, Issue No. 2 and 3

In developing the work statement for smolt monitoring and water budget analysis, BPA will provide full opportunity for concerned parties to provide recommendations.

Letter No. 4, Issue No. 4

See previous response.

Letter No. 4, Issue No. 5

This project did not presume that water flow in the John Day Reservoir or at John Day Dam was a problem nor was it designed to determine why fish (0-age chinook salmon) "hold up" at John Day Reservoir. The purpose of the study was to determine whether minimum summer flows as requested by the fish and wildlife agencies and Indian tribes, were required to improve survival and, if required, establish flow levels and timing. The working hypotheses of the project are; 1) passage time of 0-age chinook salmon in John Day Reservoir is not dependent upon in-stream flow levels, and; 2) passage time of 0-age chinook salmon in John Day Reservoir does not influence overall survival.

Letter No. 4, Issue No. 6

Concerns have been raised by fishery management entities that while the Water Budget is based on weekly flows, within week flow fluctuations may affect smolt migration. BPA will establish a technical work group to review this hypothesis and then decide what, if any, research may be necessary. BPA will request representation at PNUCC on the work group.

Letter No. 4, Issue No. 7

BPA agrees with this statement; however, the projects in Section 704(d)(1) are not water resource development. Projects being implemented are high priority habitat improvement as designated by the fish and wildlife agencies and Tribes.

Letter No. 4, Issue No. 8

BPA is implementing the feasibility phase of these projects which will include seeking State approval and obtaining permits.

Letter No. 4, Issue No. 9

BPA is presently establishing a crediting system. BPA is stabilizing implementation of new projects to partly allow development of the crediting policy and process and the evaluation and monitoring program.

Letter No. 4, Issue No. 10

BPA intends to fully implement the evaluation of ongoing projects in FY-1986.

Letter No. 4, Issue No. 11

BPA is obtaining the necessary permits and seeking State agency approval for these projects.

Letter No. 4, Issue No. 12

As indicated in our Plan, BPA is prepared to implement Projects 86-16 and 86-56 upon adoption by the Northwest Power Planning Council of the Umatilla River Basin Comprehensive Plan. The Comprehensive Plan is scheduled for completion by November 15, 1985 and will be submitted to the Northwest Power Planning Council for their consideration. The initial phase of both projects is planning to determine responsibility, feasability, acquire easements and other necessary activities that are required prior to initiation of final designs and construction.

Letter No. 4, Issue No. 13

Adequate in-river flows may not be available in portions of the Umatilla River Basin in all years or throughout any given year to protect migrating anadromous fish. However , based upon past flow records, adequate in-river flows can be expected during some portion of the migration for all species and stocks anticipated to be present in the Umatilla River in almost every year. Therefore, a reasonable level of fish resource benefits are expected by improving passage conditions and providing facilities for interim trap and haul at Three Mile Diversion Dam.

Letter No. 4, Issue No. 14

BPA will await the PNUCC's comments.

Letter No. 4, Issue No. 15

Normally, final design and construction of passage facilities are not funded until the necessary agency plan approvals, permits, and NEPA requirements have been completed. The cited projects have been funded for only the preliminary design/feasibility study phase. This phase will produce the plans for agency approval, which BPA will seek from the State of Idaho.

Letter No. 4, Issue So. 16

Idaho Fish and Came is the independent party evaluating USFS and private contractor projects since the State has authority for anadromous fish. EPA intends to use independent parties (consultants) where appropriate.

Letter No. 4, Issue So. 17

Eoth projects are considered fish passage and not water development.

Letter No. 4, Issue No. 18

See BPA comment, Issue 7, Letter 4.

Letter No. 4, Issue No. 19

The feasibility phase is not complete so further funding has not been decided.

Letter No. 4, Issue No. 20

BPA agrees with this comment.

Letter No 4, Issue So. 21

Revisions to the Plan have been made to accomodate the comment.

Letter So. 4, Issue No. 22

Revisions to the text have been made to accomodate the comment.

Letter So. 4, Issue No. 23

BPA does not intend to pursue the initiation of this project until a better definition is provided for "Low Capital facility" and what should be included in the project.

Letter No. 4, Issue So. 24

BPA agrees with these statements.

Letter No. 4, Issue No. 25

BPA's proposed funding of these projects would be in addition to and not in lieu of each agency's current fish health monitoring program. The gravity of the disease problems and the potential benefits of increased hatchery effectiveness, merit the consideration of these projects, which will assist in controlling BKD, IHN, and other diseases as requested.

Letter No. 4, Issue No. 26

These three projects were identified as high priority objectives by the Fish and Wildlife agencies and Tribes at the BPA-sponsored Smolt Workshop. The objectives and criteria are normally developed and stated in the statement of work. BPA will develop these with the assistance of the fishery agencies, Tribes, and PNUCC.

Letter No. 4, Issue No. 27

BPA will take this comment under consideration when prioritizing the 704(h) projects.

Letter No. 4, Issue No. 28

BPA is obligated to convey the results of its projects to the operators. This project's objective is, in part, to determine the most efficient and cost effective means to achieve that objective. Additionally, BPA recognizes that ineffective communication between key entities is a major impediment to successful program implementation, and therefore, seeks ways to improve it.

Letter No. 4, Issue No. 29

The initiation of a new research project is based on the assumption that the Council will take action and that the constraints will be moot. The cost of this project can't be estimated until the first phase is finished and evaluated. The work plan will be sent to the Council in October, 1985.

Letter No. 4, Issue No. 30

BPA expects that these concerns will be taken into consideration during project development.

Letter No. 4, Issue No. 31

Project 87-21 will not be initiated until 86-63 is completed and a coordinated operational plan is submitted by the Fish & Wildlife and Tribal agencies.

Letter No. 4, Issue No. 33

BPA agrees that this action item does not apply directly to it.

Letter So. 4, Issue No. 33

Evaluation studies will be conducted contingent upon the results of the turbine screen tests. Plans for evaluation will be developed in the latter stages of the testing phase. The technology derived from this project is intended to have generic applicability to most hydroelectric development situations. The study is not intended for use at a specific site and is not construed as conflicting with section 4(h)(10)(A) of the Regional Act. This technology will assist developers and biologists when recommending adequate turbine related fish protection devices. Additionally, BPA does not intend to support projects which only benefit a single hydro development.

Letter No. 4, Issue No. 34

BPA disagrees with this position. The issue here is whether it is appropriate for BPA to selectively ignore Action Item 39.1 relative to Projects 86-19 and 86-23, and not ignore it on other projects. BPA respectfully submits that to do so would be arbitrary and inconsistent. Additionally, BPA points out that this action item was very specifically limited in application to FY-85, not FY-86. Finally, it should be noted that Action 39.1, if observed, applies only to "new research projects", and therefore does not apply to non-research. Therefore, BPA will proceed cautiously in deference to this issue.

Letter No. 4, Issue No. 35

BPA has noted PNUCC's comment regarding evaluation of loss statements and will give this due consideration.

Letter No. 4, Issue No. 36

The process outlined in the Fish and Wildlife Program for wildlife planning is to identify any net wildlife losses, and to recommend actions for wild1 ife protection, mitigation, and enhancement. It is the role of the Council to determine if wildlife protection, mitigation, and enhancement actions for the Willamette Basin hydroelectric facilities or any other hydroelectric facility should be included in the Program. BPA will review wildlife mitigation actions and determine if they are appropriate for BPA implementation.

Letter No. 4, Issue No. 37

Same comment as to Letter So. 4, Comment No. 36.

Letter No. 4, Issue No. 38

BPA has established a work group for developing wildlife protection, mitigation, and enhancement needs (Wildlife Plan) for Dworshak. PNUCC is a member of this work group and will be able to provide input and comments throughout development of this wildlife plan.

Letter No. 4, Issue No. 39

Same comment as to Letter No. 4, Comment No. 36.

Letter No. 4, Issue No. 40

BPA is in the process of initiating a work group approach for developing wildlife protection, mitigation, and enhancement needs (Wildlife Plan) for Grand Coulee Dam. PNUCC is a member of this work group and will be able to provide input and comments throughout development of the wildlife plan.

Letter No. 4, Issue No. 41

The Ural-Tweed Bighorn Sheep habitat enhancement project will be allocated to wildlife protection, mitigation, and enhancement for hydroelectric development at Libby Dam.

Letter No. 4, Issue No. 42

BPA concurs with PNUCC that wildlife mitigation plans need to be given adequate public review which is best provided through the Council's amendment process.

Letter No. 4, Issue No. 43

BPA agrees with the comments regarding whties sturgeon research. The projects funded by BPA will be directed toward determining the effects of hydroelectric impacts on the white sturgeon populations in the Basin.

Basic research funding is not being performed solely with BPA funds. The Idaho Department of Fish and Game has done research on stock status and habitat needs in the Snake River area for several years. Reports are available.

The National Marine Fisheries Service has funded projects. The U.S. Fish and Wildlife Service funded white sturgeon research in the John Day pool. The Washington Department of Fisheries is currently performing sturgeon research in the Columbia River below Bonneville Dam.

Letter No. 4, Issue No. 44

Your concurrence is noted.

LETTER NO. 5

COLUMBIA BASIN FISH AND WILDLIFE COUNCIL

LLOYD BUILDING • SUITE 1240
700 N. E. MULTNOMAH STREET
PORTLAND, OREGON 97232

503 231-2241
FTS 429-2241

OFFICE OF
EXECUTIVE SECRETARY

SEP 19 1985

September 18, 1985

Mr. John R. Palensky, Director
Division of Fish and Wildlife
Bonneville Power Administration
P.O. Box 3621
Portland, Oregon 97208

Dear Mr. Jouy:

This letter responds to your request for comments on the BPA FY 86 Draft Implementation Work Plan, which was developed pursuant to Action Item 39.2 in the Columbia River Basin Fish and Wildlife Program. We recognize that your September 19, 1985 deadline for receipt of comments is an attempt to minimize further slippage on the preparation of the final work plan that the Action Item requires you to submit by September 15, 1985. However, the brief comment period precludes development of joint comments at this time and we do not foresee being able to give the plan a thorough and careful review in the time allotted. Based on the schedule included in section 4 of your 1985 plan, we had expected to have substantially more time available for review of the draft plan.

At our September 17, 1985 meeting, we decided that member agencies should provide their individual comments to meet your deadline. Thereafter we will summarize the comments of our members and provide a Columbia Basin Fish and Wildlife Council statement for the record--although we would hope that you might consider particularly significant points even after your implementation plan is submitted to the Northwest Power Planning Council.

Thank you for the opportunity to comment.

Sincerely,

for John R. Donaldson, PhD
Chairman

BPA Responses to Issues Raised by the
Columbia Basin Fish and Wildlife Council
in LETTER NO 5

No issues raised.

LETTER NO. 6

U.S. Fish and Wildlife Service
National Fishery Research Center
Willard Substation
Star Route
Cook, Washington 98605

SEP 20 1985

September 19, 1985

John R. Palcnsky, Director
Division of Fish and Wildlife
Bonneville Power Adminsitration
P.O. Box 3621
Portland, OR 97208

Dear John:

Issues

Hr. Wally Steucke asked me to review and comment upon your FY 86 Draft Implementation Work Plan for the Columbia River Basin Fish and Wildlife Program for the Fish and Wildlife Service. I found the FY 86 Program very conservative, non-controversial, and disappolnting. Considering the magnitude of the problems in the Columbia Basin the FY 86 Program only identifies the need for nine new projects dealing with anadroous fish, seven dealing with wildlife, and three dealing with resident fish. Eleven additional anadromous fish projects are recommended under measures 704(h) and 704(k) but as we are both well aware their fate is uncertain. Without Initiation of these eleven projects I can only classify 1986 as an embarrasment for all - BPA, NPPC, fish and wildlife agencies, and tribes; evidently our imagination and initiative is being strangled by the bureaucracy. (1)

I was encouraged to see the eleven new projects under measures 704(h) and 704(k) recommended for initiation in FY 86 in the event the NPPC decides to lift the funding restriction in Action Item 39.1. Although I would be satisfied to see any projects under these measures initiated I was dismayed the prioritized list submitted to you July 23 from the CBFWC was not followed. The FY 86 Program deleted projects to determine the epiozootiology of IHN and BKD and to develop a hatchery data-base system, projects which were ranked 3, 4, and 6, respectively, while including projects ranked lower. It is my impression that there is the perception by some of your staff that the projects dealing with the eipzootiology of IHN and BKD duplicate work being conducted by Dr. 3. Fryer under project 83-312, 'Epidemiology and control of infectious diseases of salmonids in the Columbia River Basin section'. Although I have not discussed this matter with Dr. Fryer I feel confident he would be the first to acknowledge his ongoing project will not answer all the question dealing with the epitootiology of these two diseases and encourage the initiation of new projects. I certainly believe your (2) (3)

staff is capable of ensuring that duplication does not occur during the development of work statements for these projects. Finally, I find it incongruous that the FY 86 Program recommends projects dealing with preventing IHN and BKD while rejecting the epirootiology projects needed to provide the basic knowledge upon which control methods are based.

Issues

I noticed parts of the CBFUC recommended project to develop a hatchery data-base system were incorporated under the fish health monitoring projects for Idaho (86-23), Oregon (86-53), and Washington (86-54). Each of these three monitoring projects includes, "Task (4) Determine an appropriate, economical means of preserving, retrieving, and analyzing fish health data". I consider this triplication of effort which could better have been handled under the data-base system project. Also the hatchery data-base system recommended by the CBFWC was not limited to fish health data but included environmental conditions, hatchery practices, rearing and release strategies and adult survival.

(4)

In summary, I believe all the projects contained in the FY 86 Program appear worthy of initiation. Hopefully, the projects under 704(h) and 704(k) will be accepted and make 1986 an above average year rather than an embarrassment. By deleting 86-83 Evaluation of smolt indicies and hatchery practices, 86-84 Improved fish transporation technology in outplanting fish, and 86-14 Technical information transfer for improving hatchery effectiveness from their FY 86 Program and substituting the CBFWC projects to determine the epirootiology of IHN and BKD and to develop a hatchery data-base system, 1986 could become an outstanding year.

(5)

Sincerely,

William R. Nelson

dge

cc: W. Steucke, FWS
M. Schneider, NPPC
K. Martinson, CBFWC

BPA Responses to Issues Raised by the
U.S: Fish and Wildlife Service
in LETTER NO. 6

Letter No. 6, Issue No. 1

EPA appreciates the writers high level of frustration, but does not control the complex bio-political aspects of the Program.

Letter No. 6, Issue No. 2

The issue here is whether three projects of high priority (two on epidemiology and a data base) were dropped, while projects with lesser priority were retained by BPA. This was not the case. BPA incorporated the **tasks** in the epidemiology and data-base projects into other projects on fish health monitoring (Projects 86-24, 53, and 54). This action was not clearly described in the draft Annual Work Plan. BPA regrets the confusion, and has corrected the test accordingly. (Also see Issue 4, Letter 6)

BPA believes that the best way to accomplish these projects is by supplementing the health monitoring efforts of fish hatchery-operating agencies. This strategy recognizes the partnership of the hatchery operator and fish health specialist and that their close, mutual support is critical to the Program. Furthermore, each fish-rearing agency in the Columbia River Basin already has the basic skills, equipment, and facilities to accomplish most of these goals, but lacks adequate funding for it's full implementation. BPA believes that this approach will be **more** cost-effective, expeditious, beneficial, and gives due weight to the agencies existing efforts. BPA's approach also eliminates potential problems of redundancy, coordination, and cooperation between a contractor and a fish agency. All methods to be used **will be** standardized between the agencies before funding will be approved; hence the resulting data will be standard, comparable **and** public.

Letter So. 6, Issue So. 3

BPA agrees that OSU's epidemiology **study (83-312)** will not answer all the questions about the epidemiology of **BKD** and IHN. For this reason, BPA will attempt to fund the Fish Health Monitoring projects, which will provide epidemiology data on all fish diseases.

Letter So. 6, Issue So. 4

Previous efforts to install a single, region-wide hatchery **data-base system have** failed twice. This project's goals **may** be important but implementation probably can't be achieved unless the benefits are clarified and the fish hatchery operators embrace them. BPA believes that one of the key elements for success is "owner-participation". Each Basin fishery agency already has a hatchery **data-base system** which could be modified to serve this purpose **and,** therefore, BPA is currently holding discussions with fishery agencies to determine both the needs and best way to accomplish **a data-base.** (Also see Issue 2, Letter 6)

Letter No. 6. Issue No. 5

BPA will give this suggestion full consideration if the need to reorder priorities arises. Workload constraints make it likely that projects will be dropped rather than added.

FEDERAL ENERGY REGULATORY COMMISSION
WASHINGTON, D.C. 20426

SEP 27 1985

OHL-DEA

Mr. John R. Palensky
Director
Division of Fish and Wildlife
Bonneville Power Administration
P.O Box 3621
Portland, OR 97208

Dear ~~Mr. Palensky~~:

This acknowledges receipt of the Bonneville Power Administration's FY-86 Draft Implementation Work Plan for the Columbia River Basin Fish and Wildlife Program, prepared pursuant to Action Item 39.2 of the Program.

Staff has reviewed this draft work plan and has no comments to offer.

Sincerely,

Dean L. Shumway
Director, Division of
Environmental Analysis

BPA Responses to Issues Raised by the
Federal Energy Regulatory Commission
in LETTER NO. 7

No issues raised

LETTER NO. 8

SEP 25 1985

IDAHO DEPARTMENT OF FISH AND GAME
600 South Walnut • Box 25
Boise • Idaho • 83707

September 23, 1985

Mr. John Palensky, Director
Department of Energy
Bonneville Power Administration
P.O. Box 3621
Portland, OR 97208

Dear Mr. Palensky:

The BPA FY 86 Draft Implementation Work Plan for the Columbia Basin Fish and Wildlife Program has been reviewed by our department and we have the following comments.

Issues

Project

85-69 John Day Dam Acclimation Pond - 704(i)(2)

Somewhere in the Work Plan and Milestones there should be an item addressing a production and harvest management plan agreed upon by all concerned entities. Such a plan should be agreed upon prior to completion of final design. (1)

Project

84-2 Protection of Wild Steelhead in the Upper Snake River and Evaluation of Effectiveness - Measure 504(c)(3)

If results of the demonstration project and evaluation of feasibility of methodology are favorable, we assume this project, after due consideration by BPA, could continue without amendment of the program. Please advise if this is not the case. (2)

Sincerely,

for Jerry M. Conley
Director

cc: Working Group
Kahler Martison

BPA Responses to Issues Raised by the
Idaho Department of Fish and Game
in LETTER NO. 8

Letter No. 8, Issue No. 1

A joint Tribal and Fish & Wildlife agency "John Day Acclimation work plan" has been determined to be consistent with the Program by the Council.

Letter No. 8, Issue No. 2

Once the feasibility of this tool is proven, BPA expects the Fish & Wildlife agencies and the Tribes to incorporate it's use in their base operational budgets.

LETTER NO. 9

VICTOR ATIYEH
GOVERNOR

Department of Fish and Wildlife

506 S.W. MILL STREET, P.O. BOX 3503. PORTLAND. OREGON 97208'

September 27, 1985

Mr. John Palensky, Director PJ
Divisioni of Fish and Wildlife
Bonneville Power Administration
PO Box 3621
Portland, OR 97208

Dear John:

This letter is ODFW's response to your division's draft fiscal year 1986 implementation plan for the Columbia River Basin Fish and Wildlife Program. This response will deal with selected items of direct intlerest to our agency. Items of general interest to all fish and wildlife agencies including ours will be dealt with in the response from the Columbia Basin Fish and Wildlife Council.

Projects listed for Oregon under action item 34.5 are qenerally well covered in the draft plan. However, there is one project that is not covered at all in the implementation plan and which has high orioritv for Oregon; and two that are covered but about which we have serious concerns. Installation of counting and trappinq facilities at Powerdale Dam on Hood River is included in the Power Planninq Council's proqram and, after the Umatilla River projects, has one of the hiqhest priorities in Oreqon. It certainly comes ahead of projects on the Clackamas River, as an example, as well as those on several other streams in the state. It is not listed in your implementation plan. Pacific Power and Liaht Company (PP&L), owner of the dam, has met its responsibilities to provide passaqe at Powerdale; i.e., this is not a fish passage issue. Counting of fish is needed to materially aid in evaluatinq BPA funded projects located upstream of Powerdale. Trapping is needed to collect fish native to Hood River to develop brood stocks for the svstem and aid in the fish rehabilitation effort. We have corresponded with PP&L on this subject, and the company has expressed a willinqness to cooperate in the pro-nosed project (see attached letter). We suqqest addinq a project to the FY 1956 implementation plan to beqin desian of couting and trapping facili-ties for Powerdale Dam. If funding is a nroblem, we suggest deletinq certain oroject(s) on the Clackamas River to the extent that funds are needed for Powerdale. We will work with the U.S. Forest Service to identifv project(s) that would be deleted so this hiqher priority project can be included.

(Issues)

(1)

Project 86-56 involving fish passage improvements at major Umatilla River water diversions above Three Mile Dam concerns us because it does not show any funding beyond those required for feasibility, pre-design, and NEPA studies in FY 1986. This project is extremely important if we are to achieve the full benefits of the Umatilla River Plan. The benefits of other installed and planned projects on the Umatilla could be jeopardized by failure to implement this project. We believe there should be a stated intent to fund implementation of this important project in the years after FY 1986 as there is for most other projects under action item 34.5. (Issues) (2)

Project 83-341 involving improvement of fish passage on the West Fork of Hood River is adequately described. This project is under construction and should be completed as scheduled. We are concerned that funds have not been identified for evaluating this fish passage project. This could be partly addressed by the installation of trapping and counting facilities at Powerdale Dam. Some evaluation work within the West Fork of Hood River would also be needed. We would like to see funds included for such evaluation. (3)

Under action item 34.12, Project 84-33 involving the Umatilla Steelhead Hatchery is adequately described; however, we are concerned about the length of time scheduled to develop this relatively small facility. The report prepared by ODFW not only dealt with hatchery siting, but also covered most of the essential elements of preliminary design. We, therefore, do not agree that one year is needed for preliminary design by a consultant, as indicated by SPA personnel at our September 24 meeting. We believe the schedule for design, NEPA work, and construction of this facility can be reduced by one year. (4)

Additional to the above concerns, we also believe corrections are needed in a couple of the project descriptions as follows:

Project 83-436, Three Mile Diversion Dam Fish Passage

The first sentence should include spring chinook salmon. (5

Project 85-69, John Day Dam Acclimation Pond

The text indicates this facility will mitigate fish losses due to "operation" of the dam. This is incorrect. John nay mitigation fish only replace those lost due to inundation of the spawning area by John Day Reservoir. No hatchery fish have been provided to date to mitigate operational losses caused by the dam. (6

We appreciate the opportunity to comment on this important issue. I would further appreciate havinq members of your staff meet with my personnel to discuss our concerns.

Sincerely,

for John R. Donaldson, PhD
Director

lkw
Attachnent
C James, CTUIR
Evans and Esch, NMFS
Olney and Garst, USFWS
Martinson, CBFWC
Dompier, CRITFC
Hauaen, USFWS
Chrisman, NPPC
Weiss, PP&L

BPA Responses to Issues Raised by the
State of Oregon, Department of Fish and Wildlife
in LETTER NO. 9

Letter No. 9, Issue No. 1

BPA will be implementing an evaluation of BPA projects in FY-86. Funding of the trapping and collection of brood stock should be considered under the hatchery supplementation work plan, when the NPPC establishes appropriate objectives via Action Item 39.1

Letter No. 9, Issue No. 2

As stated in the Plan, BPA is prepared to implement this project upon adoption by the Northwest Power Planning Council of the "Umatilla Basin Comprehensive Plan". Until preliminary planning and cost estimation are complete, it is impossible to know how much borrowing authority BPA should request from the U.S. Congress. It is anticipated that adequate time will exist upon implementation of the project to seek appropriate borrowing authority, since NEPA, feasibility, pre-design activities, development of operation and maintenance agreements, aquisition of easements and other necessary permits will require a substantial period of time.

Letter No. 9, Issue No. 3

See Issue No. 1, above.

BPA intends to evaluate the West Fork Hood River Falls fish passage project separate from the Powerdale Dam Project. Evaluation of this project will potentially entail the following:

(1) Installation of a false weir and camera at the existing Punch Bowl Falls fish ladder, downstream from the West Fork passage project.

(2) Correlation of this data with existing baseline information to monitor trends.

Letter No. 9, Issue No. 4

The report dealt with most, but not all, of the elements of feasibility and preliminary design. BPA will not initiate final design of a facility until a complete feasibility and preliminary design report that contains reasonably detailed cost estimates is completed.

Letter No. 9, Issue No. 5

The suggested editorial correction to the Plan has been made.

Letter No. 9, Issue No. 6

See letter 2, comment 4

LETTER NO. 10

COLUMBIA BASIN FISH AND WILDLIFE COUNCIL

LLOYD BUILDING . SUITE 1240
700 N. E. MULTNOMAH STREET
PORTLAND, OREGON 97232

231-2241
429-2241

OFFICE OF
EXECUTIVE SECRETARY

September 27, 1985

Mr. John R. Palensky, Director
Division of Fish and Wildlife
Bonneville Power Administration
P.O. Box 3621
Portland, Oregon 97208

Dear Mr. Palensky:

Several of the member agencies of the Columbia Basin Fish and Wildlife Council have reviewed the Bonneville Power Administration (BPA) FY 86 draft Implementation Work Plan. In addition to their individual comments, submitted separately, the following summarizes suggestions they would like to emphasize as a group:

(Issues

Section 33.1 - Funding of Water Budget Managers

While these items may have been appropriate in July of 1985, ongoing events are changing the scope of this funding. Conceptual agreement has been reached with BPA in which Projects 83-536 and 83-491 will be expanded in terms of staff, funding amount, and means of funding. Portions of the present 80-1 project will be included in 83-536 and 83-491. This will require a funding shift between projects, and increase total funding amounts because of these structural changes. Projects 83-536 and 83-491 will be changed from contracts to grants. We suggest that funding amounts be deleted from this document until new agreements are reached. (1)

Section 33.2 - Research and Monitoring

The comments on Section 33.1 apply here also. Most recent discussions reflect funding shifts, so we recommend funding amounts be deleted. (2)

Section 34.5

704(d) habitat improvement and passage restoration projects require evaluation: we suggest evaluation work be expanded in FY 86. (3)

Section 34.23

We are pleased that you included new 704(h) hatchery improvement projects for FY 86. We suggest that you reconsider your selection and add or substitute the projects we recommended on determining the epizootiology of IHN and BKD and development of a hatchery data base system (our priorities (4)

3, 4 and 6 on the list we submitted to you 7/23/85). We do not view the IHN and BKD proposals duplicative of the ongoing work (Project 83-312), but rather a necessary expansion of the critically important investigations. The data base system should be funded as one project and scoped to include data on hatchery practices, rearing and release strategies, adult survival as well as fish health.

Issues)

To ensure the availability of hatchery fish for research purposes, we suggest you initiate funding for hatchery expansion in FY 86. In a letter of 3/26/85, we listed facilities in Idaho, Oregon and Washington that could be expanded to meet research fish needs. Planning and design work on one or more of these sites should be started soon. (5)

We appreciate your consideration.

Sincerely,

for John R. Donaldson, PhD
Chairman

cc: Jan Chrisman
Tim Wapato

BPA Responses to Issues Raised by the
Columbia Basin Fish and Wildlife Council
in LETTER NO. 10

Letter No. 10, Issue No. 1

Discussions are currently underway regarding the scope of BPA's funding of water budget management. BPA will determine final budget amounts and contractual mechanisms upon receipt and review of recommendations from concerned parties .

Letter No. 10, Issue No. 2

See previous response.

Letter No. 10, Issue No. 3

BPA is implementing this suggestion in FY-86.

Letter No. 10, Issue No. 4

See BPA comments on Letter No. 6, Issue No. 2, 3, and 4.

Letter No. 10, Issue No. 5

BPA assumes the fishery agencies will develop a process which will assure that appropriate fish will be reared for research needs. At that time, BPA will initiate funding for this concern.

LETTER NO. 11

OCT

WILLIAM R WILKERSON
Director

STATE OF WASHINGTON

DEPARTMENT OF FISHERIES

115 General Administration Building • Olympia, Washington 98504 • (206) 753-6600 • (TDD) 234-6600

September 27. 1985

Mr. John Palensky, Director
Division of Fish and Wildlife
Department of Energy
Bonneville Power Administration
P.O. Box 3621
Portland. Oregon 97208

(Issues)

Dear John:

Ye appreciate the opportunity to review the FY-86 Draft Implementation Work Plan for the Fish and Wildlife Program. We are concerned. however. with the short time provided for that review. While we would have prefer-cd to coordinate our response with the other fish and wildlife agencies. time did not permit. Our comments are indicated below.

Action Item 34.23. The Department of Fisheries and the CBFWC's Anadromous Fish Research Reeds Committee has presented to BPA the proposal titled "Evaluation of the production of fall chinook originating from Columbia River hatcheries". We feel strongly that this evaluation should be included in the projects to be sunded in FY-86 under Measure 704(h)(2)(a). The primary objective of this study is to identify and evaluate post-release juvenile fall chinook survival problems which are currently limiting adult Columbia River production and consists of three tasks as stated by the AFRNC: (2)

(1) Compile existing information to develop a comprehensive data base for juvenile and adult fall chinook production statistics and environmental parameters similar to that for coho in the OPI.

(2) Analyze relationships between production statistics and potential production limitations imposed by environmental influences inter- or intraspecies interactions. hatchery practices. and other factors limiting survival of fall chinook.

(3) Recommend strategies for testinq and implementing possible solutions such as rearing and-release strategies. production levels. improved culture techniques.

While the emphasis will be primarily on hatchery produced juveniles. potential interrelationships with natural and wild outmigrants will also be examined. Large sums of money are spent each year in the production of fall chinook. These funds are primariliy from mitigation sources. We need to conduct this study to better define production problems and make the best use of the production funds available. (3)

Pro ject 86-57, This agency has st rongly endorsed the concept of a major time/size studv. More recently, the nerd for a time/size of release

study was ranked number one in priority during the Smiltification Workshop. We have viewed the coordinated release strategy with in the Columbia River as the only way to control variables such as release timing. size, and in-river density while trying to address uncontrolled environmental variables contributing to the OPI coho problem. We recognize, however, that this will be an extremely large **and** expensive undertaking requiring complex coordination. A major variable in the success of production is smoltification itself. Until we can control that, the results of the study will be suspect. Consequently, we feel now that this studv should take second priority to smolt manipulation studies.

Issues

Project 86-13. As indicated above, this is a top priority study need in artificial production. In order of priority, the tasks are 3, 2, 1, and 4. We urge that this study be implemented in FY-86. (4)

Project 86-83 The production agencies bear the responsiblity to "...develop standardized cultural or management practices.. ." Unless the work is conducted by the agencies. it is unlikely that the dictated results will be acceptable to them. It is not sufficient to develop strategies for the regional categories described here ("lower, middle, and upper river"). The strategies must be facility specific refined from information developed on a regional basis. (5)

Project 86-62. We are extremely pleased to see this project included in the FY-86 program and anxious to see the effort move forward. We feel that the success of supplementation, along with improved passage survival. will be the center point of improvement of upriver runs. (6)

Project 86-63. This project is redundant in its present context although it obviously played its role early on in the planning sequence. Many of the objectives identified in the narrative are being accomplished in other fora. (7)

Action Item 34.5. The total cost of the implementation of 704(d) measures is projected to be S11,314,000 in FY-86 alone. We continue to feel that far too much attention is being given to habitat improvement projects, detract ing from other needs. BPA should be prepared to modify this element of the Program based on the results of the on-going negotiations in US vs. OR. (8)

Projects 55-52 and 85-83. We are pleased to see the work on these Wenatchee River fish passage measure proceed. As we have previously pointed out, there is a need to incorporate fish collection facilities into the design at both Dryden and Tumwater Dams. (9)

Project 83-477. Again. I must caution you that the Department of fisheries does not place Enior Dam passage as a high priority salmon **enhancement preject.** We will support the project if it is feasible from a steelehad production standpoint **but** would not consider it to **be high** on the list of priorities for salmon plants. We raised a number of questions relative to the potential productivity of the project which have not been answered. (10)

Issues

(11)

Action Item 38.1. Project 85-84. The work plan submitted to the Council and BPA for this measure called for possible BPA funding support in FY-85 and FY-56. not just one year as implied here. FY-86 funding needs are pending the status of the FY-86 status of Pacific Salmon Treaty appropriations. Continuity of the coastwide chinook project is critical. BPA should include within the work plan the flexibility to cover up to several months of additional funding is the Treaty appropriations are delayed.

Again. we appreciate the opportunity to respond to this document. Our staff will be happy to meet with you to discuss the implementation of FY-86 projects.

Sincerely,

Lloyd A. Phinney
Salmon Program Coordinator

cc: Kahler Hartinson. Columbia Basin Fish and Wildlife Council

BPA Responses to Issues Raised by the
State of Washington, Department of Fisheries
in LETTER NO. 11

Letter No. 11, Issue No. 1

Comment noted.

Letter No. 11, Issue No 2

BPA is contemplating using this study as an integral part of Phase I of Project 86-57 (time/size of release).

Letter No. 11, Issue No. 3

BPA will consider this information in prioritizing it's 704(h) funding.

Letter No. 11, Issue No. 4

As indicated, BPA will attempt to implement this project in FY-86 and take this information into consideration.

Letter No. 11, Issue No. 5

This information will be taken into consideration when project development is initiated.

Letter No. 11, Issue No. 6

As indicated, BPA will attempt to initiate this project in FY-86.

Letter No., 11Issue So. 7

If these objectives are already answered by another process in the basin. then EPA will redirect it's efforts to other priority projects.

Letter No. 11, Issue No. 8

BPA agrees with this comment and has taken action described in the FY-86 Habitat Plan (Action Item 34.5).

Letter No. 11 - Issue So 9

WDF requests the incorporation of fish collection facilities in the fish ladders at both Tumwater and Dryden Dams. The Tumwater/Dryden technical workgroup discussed this issue at it's October 2, 1985 meeting. Fish collection facilities will be incorporated in the ladders as requested.

Letter No. 11, Issue No. 10

BPA has addressed issues on Enloe Dam via a feasibility study, which is currently out for comment. BPA's position may be revised in response to those comments.

Letter No. 11, Issue No. 11

BPA agreed to fund a portion of the Electrophoresis Study, Project 85-84, through October 31, 1985. BPA has coordinated this project with the National Marine Fisheries Service (NMFS) Seattle, and requested that NMFS find an alternative source of funding pending authorization of US/Canada Treaty funds. NMFS agreed to attempt to obtain the funding elsewhere.

LETTER NO. 12

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
ENVIRONMENTAL & TECHNICAL SERVICES DIVISION
847 NE 19th AVENUE, SUITE 350
PORTLAND, OREGON 97232-2279
(503)230-5400

September 27, 1985 F/NWRS

Mr. John Palensky
Bonneville Power Administration
P.O. BOX 3621
Portland, Oregon 97208

Dear Mr. Palensky:

This letter responds to your request for comments on the "FY-86 Draft Implementation Work Plan,' which was developed pursuant to Action **Item 39.2** in the Columbia Basin Fish and Wildlife Program. Our principal concerns are the inappropriate emphasis of the plan on offsite enhancement activities, and the lack of any mechanism for effective fish and wildlife agency participation in its development. (1) (Issues)

We are also concerned that in this, the fourth year of BPA funding under the Fish and Wildlife Program, you have yet to develop a satisfactory process for involving the fish and wildlife agencies and tribes in the review of specific proposals to be funded under this plan. All research proposals and study designs concerning Columbia Basin fisheries should be reviewed and approved by the affected fishery managers. These fishery agencies and tribes should likewise be given the opportunity to review all draft research reports and to have their comments incorporated into the final reports. Such a role for the fishery agencies and tribes is critical to the success of the Program since it is these same agencies and tribes that have the authorities and responsibilities to implement the results of these projects in their management programs. In our view, this is clearly the role for the fishery agencies and tribes intended in Program measure 1304(c) (2) which states that "study plans will be designed in cooperation with all affected parties . . . to reach agreements . . . on the design, scope, and measurement of results."

One exception to these general concerns is in the area of hatchery efficiency research. A great deal of time and effort in the last year has been devoted to the development of priorities for research under Measure 704(h). In our view, this process has successfully focused attention on the key elements which must be addressed if we are to significantly increase the productivity of existing facilities. Your participation in and partial sponsorship of this process, and your recognition of its conclusions in your draft funding plan are to be commended. (2)

The specific comments which follow address Program areas rather than individual projects. More specific comment on individual projects would require a review of detailed project proposals.

Offsite Enhancement

We are concerned with the emphasis that this plan places on offsite mitigation activities. We acknowledge that offsite enhancement may be the preferred or the only practical means of achieving mitigation in some instances. However, the emphasis of the Program should be on the improved survival of existing production at and between hydroelectric projects, and on in-kind, on-site compensation for hydropower-caused losses that cannot be fully mitigated.

We are also concerned with the lack of adequate monitoring and evaluation to determine the effectiveness of funded habitat enhancement. This information is essential both for measuring progress under the Program and for improving on the technology. In particular, we are concerned that the numerous small projects (primarily instream structures which are intended to increase the amount of spawning or rearing habitat) are being treated as though they can be expected to provide specific increments of new production that will mitigate for hydroelectric projects elsewhere in the Columbia Basin. These projects may indeed result in such increased production. However, the effectiveness of these measures in significantly increasing anadranous fish production in the variety of applications where they are being employed has yet to be demonstrated. We do not, however, object to funding for any specific project of this type provided that there is no risk of adverse fishery impact. We recommend that projects of this nature be considered experimental and that they be implemented on a limited basis. They should include explicit plans for evaluation and, if successful, integration with harvest management objectives of the fishery agencies and tribes.

Downstream Passage Problems

We recommend increased BPA funding of projects addressing downstream survival problems. We could support funding as you proposed to investigate the effects of short term flow fluctuations on juvenile fish migration. We also support additional research to improve the effectiveness (including the cost-effectiveness) of interim measures, such as spill, employed to move fish past hydroelectric projects by non-turbine routes. In the latter area, there are many information gaps that limit our ability to shape spill at individual projects so as to achieve maximum benefits from limited spill. At recent meetings of the the Power Planning Council's Mainstem Passage Advisory Committee, BPA, the Corps, and the Pacific Northwest Utilities Conference Committee representatives questioned a number of the assumptions employed by the fishery agencies and tribes in the development of our recommended spill plan. While these assumptions are based on and supported by the best available scientific knowledge, we agree that better information in this area is needed. Specifically, additional information is needed in the areas of spill efficiency, spill survival, seasonal and die1 fish distribution, bypass efficiencies and survival, and factors affecting all of these.

In the near term, we view the highest priorities among the above areas as those elements relating to spill management. To make the most effective use of limited spill, we must know when fish arc present, where and how they are approaching the project, and how they respond to various modes of project operation. Therefore, we recommend a program of monitoring at each of the Federal projects where, for the immediate future, spill will be the principle means of juvenile fish bypass. These projects are Bonneville, The Dalles, Ice Harbor and Lower Monumental. If operating gate modifications at Lower Granite and Little Goose cannot be completed by the 1986 outmigration then low fish guidance efficiencies will result in spill requests at these projects. Therefore, spill effectiveness monitoring may be needed at these projects as well. Monitoring should be through the use of hydroacoustic techniques. Alternative methodologies such as the radio tag may also be useful once their effectiveness has been adequately evaluated. Monitoring data should be coordinated with Corps monitoring if any and be designed to feed directly into the in-season decision-making process for juvenile fish bypass spill. While this information could also be used to compare spill alternatives in pre-season planning, its use in the actual management of spill in subsequent years will require data collection through at least three migrations. Additional monitoring may be required dependent on the range of conditions and the variability experienced in the first three years. It is also possible that extreme variability at some projects may result in a need for continued monitoring to maximize the cost-effectiveness of fish spill.

The research needs identified by the NPPC's Mainstem Passage Admisory Committee that would not be covered by the above monitoring program are spill and bypass survival, and bypass efficiency. These are all being addressed to a certain extent by the Corps. They have been limited, however by the availability of both funds and research fish, particularly in the case of survival studies. Spill survival information at projects with flip lips such as the Corps' Lower Snake projects is an immediate need since spill is the primary method of bypass at a number of these projects. We also agree with the need for bypass survival information. However, bypass survival information collected in the near term would be of limited value due to planned structural renovations which will be taking place at most projects (e.g. operating gates at Lower Granite and Little Goose, expansion at McNary, and guidance efficiency at Bonneville second powerhouse). Bypass survival as it relates to specific bypass system components would be of value in the near term, however, and should be a high priority. For example, research on screen, conduit, or outfall designs could contribute valuable information to the design of the numerous new facilities required by the Fish and Wildlife Program. BPA funding in this area should complement Corps and PUD activities. Studies on screen and conduit systems are already in the Council's Action Plan and your draft implementation plan. We urge you to give a high priority to the timely implementation of your porposed plan for these items.

Survival studies for both spillways and bypasses must be well replicated and must include a number of years and river conditions. Conclusions should ultimately be based on adult survival and therefore large numbers of test fish will be required. Availability of research fish has been a significant factor limiting this research. Therefore, in addition to direct funding for research activities in this area, BPA could also contribute indirectly to these objectives, as well as others, by providing funding for expanded hatchery production to meet research fish needs. In these studies, as in any fisheries research, the fishery agencies and tribes should review and approve all research proposals and study designs, and should be given the opportunity to review all research reports in draft and to have their comments incorporated into the final report.

issues

(7)

Production Research

We are pleased with the increased emphasis that this plan places on research to improve production at existing facilities. We are also pleased with the extent to which the research areas identified for new starts conforms to the recommendations expressed in the July 23, 1985 letter to you from the Columbia Basin Fish and Wildlife Council and the Columbia River Inter-tribal Fish Commission. While there are some inconsistencies, it is our feeling that further cooperation as proposals are solicited, reviewed, and approved will assure that funded projects are consistent with the priorities identified in our previous recommendations.

Thank you for the opportunity to comment.

Sincerely,

Dale R. Evans
Division Chief

cc: CBFWC
CRITFC

BPA Responses to Issues Raised by the
U.S. Department of **Commerce**
in LETTER NO. 12

Letter No. 12, **Issue No. I**

At issue here is the extent to which EPA should involve fish agencies and the public in the process of project development and procurement. BPA recognizes the value of achieving concensus on most fish and wildlife projects, and strives to do so whenever possible. However, the situation is far more complex than indicated, and BPA must be protected from undue pressure to fund projects which are inconsistent with the Regional Act or inconsistent with the BPA Acquisition Guide.

BPA usually attempts to draft project plans and objectives with the assistance and involvement of agencies and Tribes. BPA also requests public comment on it's annual work plan (AWP). Comments on the AWP are always given serious consideration and frequently results in revisions to the project plan. However, additional public input **becomes** increasingly more difficult when the proposed project approaches actual procurement stages. Actual or perceived conf 1 ict of interest, unfair advantage or hints of scandal could destroy public confidence and in the end, produce tighter restrictions or destroy the Program. As one result, BPA has been guarded in its project development and procurement process.

BPA will continue to protect the pub1 ic interest, but has begun to use peer panels f or project evaluations and expects to use this method to evaluate some project proposals this year. The problem is not easily solved and BPA invites suggestions for its solution.

Letter No. 12, Issue No. 3

BPA appreciates the compliment, and intends to continue to improve its process for working with the agencies.

Letter No. 12, Issue No. 3

BPA believes the Plan adequately reflects the CBFWC's position regarding leels of effort. We agree that survival at and between dams is a primary **goai and** to this end, BPA is systematically undertaking **measures** in the program, consistent with the CBFWC.

Letter No. 12, Issue So. 4

EPA plans to implement projects in FY-86 to monitor and evaluate the effectiveness of habitat enhancement, **i.e.,** 86-78.

Letter So. 12, Issue No 5

The final scope and funding level of downstream migration research will be determined by BPA following receipt and review of recommendations **from** all concerned parties.

Letter No. 12, Issue No. 6

Comments noted.

Letter No. 12, Issue No. 7

See: Letter 10, Issue No. 5

[redacted]

LETTER NO. 13

SEP 30 1985

Nez Perce

FISHERIES RESOURCE MANAGEMENT

[redacted]

(208)843-2253

24 September, 1985

John Palensky, Director
Fish & Wildlife Division
Bonneville Power Administration
P.O. Box 3621
Portland, Oregon 97208

Dear Mr. Palensky:

We submit the enclosed comments on BPA's "Plans for Implementing the Columbia River Basin Fish and Wildlife Program in fiscal year 1986. We regret that we do not have the funds to pay our staff for a more complete and detailed review.

Tatsnewit x'elelyn nu nim Tsuyemki
(For the good of our Fisheries)

Burnie Hill

Burnie Hill
Fisheries Director

cc: file

BH:smc

Nez Perce
FISHERIES RESOURCE MANAGEMENT
(208) 843-2253

MEMORANDUM

TO: Burnie Hill, Fisheries Director

FROM: Brian D. Winter

SUBJECT: BPA FY 1986 Draft Implementation Work Plan

DATE: September 16, 1985

Item 34.16 C (page 49) A limit of 10,000 pounds, or any limit, of fish produced per year should not be a determination for a low capital facility. More efficient hatcheries able to produce more poundage might be neglected for review.

The levels of $50,000 for 0 & M and $250,000 for construction are arbitrary and should be raised so that all possible facilities that may meet a later "Low Capital" definition will be included. Absolute minimum 0 & M and construction costs of $1.1 million and $110,000 should be used as outlined in the theoretical hatchery designs section of the Compendium of Low-Cost Pacific Salmon and Steelhead report published by BPA.

Item 34.17 (page 51) We do not have anything we can say regarding this hatchery item as it is worded.

Item 34.18 B.3. (page 53) This one is a little out of my area of concern but it seems that they are allowing the agencies to possibly negate a tribal proposal without the same consideration for the Tribe.

Brian D. Winter
Fisheries Biologist

cc: file
enclosures

BDW:smc

BPA Responses to Issues Raised by the
Nez Perce Fisheries Resource Management
in LETTER NO. 13

Letter No. 13, Issue No. 1

See: Letter No. 4. Issue No. 23

Letter So. 13, Issue No. 2

Comment noted.

Letter No. 13, Issue No. 3

Program Measure 1304(c)(2) states that the Council expects the fish and wildlife agencies, Tribes, and project operators and regulators to consult to the fullest extent possible at each stage of program implementation, especially in the development of research plans. The Council also expects "that study plans will be designed in cooperation with all affected parties. The primary objective of this consultation in the development of research plans is to reach agreements among all parties of interest on the design, scope and measurement of results used in each of these research plans." EPA's desire to see that the Council's expectations are fulfilled, particularly the expectation that study plans be designed in cooperation with all affected parties, should not be misinterpreted as a desire to allow the agencies to negate the Tribe's study proposal without consideration for the Tribe.

LETTER NO. 14

NORTHWEST POWER PLANNING COUNCIL

SUITE 1100 • 850 S.W. BROADWAY
PORTLAND, OREGON 97205. (503) 222-5161

Toll free number for Idaho, Montana & Washington 1-800-222-3355
Toll free number for Oregon: 1-800-452-2324

Received: OCT 2 1985

October 2, 1985

John Palensky, Director
Division of Fish and Wildlife
Bonneville Power Administration
P.O. Box 3621 - Routing PJ
Portland, OR 97208

Dear ~~Mr. Palensky~~: John

On Tuesday, September 24, 1985, Dr. Schneider and I met with your staff to discuss our comments on the Bonneville FY 1986 draft work plan (Action Item 39.2). Representing the Bonneville staff were Messrs. Drais, Morinaka and Dr. Bouck. At the close of the meeting we left annotated copies of the draft work plan you circulated for review and comments on August 30. Please refer to those copies for more detailed staff comments and suggested revisions to your FY 1986 work plan. The purpose of this letter is to provide you with general comments.

The work plan format is well organized and can provide the Council with the needed information on Fish and Wildlife Program implementation with some additions, as indicated. However, we do wish to suggest further attention to the substance of the draft work plan in your revision of the document, as follows: (Issues)

1. Action Item Budget Summary. The draft work plan provides inadequate information on planned and past expenditures and obligations. (See Action Item 39.2.) The report provides funding levels for groups of projects. Where an action item involves only one project, budget information was omitted. The purpose of the action item is to provide the Council with the basis to "ensure proper coordination in the implementation of the program" (Action Item 39.2). Funding details on a project-specific basis are essential to this effort: In addition, we suggest you provide this information as an appendix to the work plan in the form of Report 14, as you did in the FY 1985 work plan. (1)

B. Projects. The work plan can be improved significantly by identifying Bonneville's objectives in pursuing each action item. As

(Issues

the report now stands, there is no unifying theme, strategy or cohesiveness. Without this, the work plan is a list of project abstracts. (2)

We also suggest that references be made to other more detailed work plans, where appropriate. This would aid understanding of the habitat and passage projects listed in Action Item 34.5. For this particular action item and in addition to objectives, we suggest a table of projects similar to that contained in the FY 1985 work plan or in Report 14. (3)

C. Work Plan and Milestones. In many cases this section of the report indicates careful thought has been given to implementation. A brief explanation of the implementation status of a particular project, results of past efforts, and accomplishments planned for FY 1986 are needed to complete the work plan. (4)

The work plan would benefit greatly by the addition of tasks and milestones identified by month and year and tailored to the specific project. The repetitive nature of some of these items does not contribute to a clear understanding of expenditures and schedules. We also are interested in seeing the anticipated accomplishments in 1986, discussed in general terms. (5)

In preparing revisions to your FY 1986 work plan, we suggest that your take the three weeks requested by your staff on Friday, September 27. It is much more important that the task be completed properly so that the production is useful to everyone rather than to rush to completion. However, expeditious completion is in everyone's best interest. (6)

If Dr. Schneider or I can be of further assistance, please call.

Sincerely,

Ronald J. Eggers, Manager
Biological Services

cc. Kahler Martinson, CBFWC
Jack Donaldson, ODFW
Tim Wapato, CRITFC

BPA Responses to Issues Raised by the
Northwest Power Planning Council
in LETTER NO. 14

Letter No. 14, Issue No. 1

BPA has provided its Report 14 to the Northwest Power Planning Council (NPPC) on a quarterly basis and will continue to provide this report which contains all the requested financial information but is restricted and not for general distribution. BPA believes that without this restriction, the preliminary information in Report 14 gives unwarranted priority to proposed projects. Further, revealing the allocated funds tends to drive the project costs upward.

Letter No. 14, Issue No. 2

The Council's suggestion for improvement was appreciated by BPA. While part of the problem was editorial and has been ameliorated by revisions, other improvements must evolve over the next year with the full participation of the hatchery operating agencies. BPA has already begun meetings which will more clearly enunciate these features in the 704(h) area.

Letter No. 14, Issue No. 3

Since writing the implementation plan, BPA has provided the NPPC with a detailed work plan for habitat and passage projects listed in Action Item 34.5

Letter No. 14, Issue No. 4

BPA disagrees. The general status of a project can be inferred reasonably well by noting the start and end dates in most of the listed tasks. Results of past efforts and accomplishments are more properly listed in annual or other reports which in most cases are public information and provided to the NPPC.

Letter No. 14, Issue No. 5

BPA has adjusted the Work Plan in response to this comment.

Letter No. 14, Issue No. 6

BPA did not request an extension of the due date from September 27 to October 18, but does appreciate the NPPC's offer and support.

LETTER NO. 15

CONFEDERATED TRIBES

of the

Umatilla Indian Reservation

P.O. Box 638

PENDLETON, OREGON 97801

Area Code 503 Phone 276-8221

DEPARTMENT of NATURAL RESOURCES
NATURAL RESOUCES COMMISSION
OCT 7 1985

OCT 04 1985

Mr. Jonn Palensky, Director PJ
Division of Fish and Wildlife
Bonneville Power Administration
PO Box 3621
Portland, OR 97208

Dear John:

The following are the Unatilla Tribe's carments on the BPA FY-86 Draft Implementation ork Plan for the Columbia River Basin Fish and Wildlife Program. (Issues

e do not concur with the indicated stipulation tier "Work Plan and Milestones" for roject 86-16 (Umatilla Habitat Imporvanent). It is our understanding that the NW ower Planning Council staff is not requiring review and approval of the ODFW (1) matilla River Basin Comprehensive Plan or program amendments before implementing his project.

e have the same comment for Project 86-56 (Fish Passage Improvements at major Umatilla iver Water Diversions). Also, funds should be identified for implementation of these (2) ery important projects in FY 87 through F'Y-89, as is the case for most projects under ction itan 34.5.

lthough the title of project 83-435 (Minthorn Springs Creek Sumner Steelhead Juvenile elease and Adult Collection Facility) mentions only summer steelhead, the facility (3) ill also be used for chinook salmon. This should be accounted for in the facility peration and maintenance budget which will be determined sometime in FY-86.

e concur with ODFW' S comments of September 27, 1985 (letter fromDonaldson to alensky) regarding time schedulingfor project 84-33 (Umatilla River Summer Steel- ead Hatchery). A one year period seems excessive for the time required to complete preliminary design. The ODFW Umatilla Hatchery Phase 1 Completion Report (finished early 1985) has already taken care of most site feasibility and initial preliminary (4) esign detai Is. Tne time estimate for developnt of both preliminary and final esign (with reveiw) in the ODFW report is approximately one year. The NEPA docuemnt ould be developed concurrently in the latter part of this period. This time schedule ems more reasonable in light of work already completed and the fact that a hatchery rrigon) was just completed in the same general area.

Thank you for the opportunity to comment on the draft FY-86 implementation plan. Each of the avoe projects are critical elements in the tribal/state Umatilla Basin fisheries restroation program.

Sincerely,

Michael J. Farrow, Director
Department of Natural Resources

cc: Tribal Fish and Wildlife Committee
CRITFC-Wapato
ODFW-Korn, Phelps
USF&WS-Garst
NMFS-Esch
NPPC-Chrisman

BPA Responses to Issues Raised by the
Confederated Tribes of the Umatilla Indian Reservation
in LETTER NO. 15

Letter No. 15, Issue No. 1

EPA with the concurrence of the Northwest Power Planning Council's staff required a detailed plan for enhancement of salmon and steelhead in the Umatilla River Basin. The plan was to integrate the various proposed enhancement activities, provide realistic cost estimates, assign anticipated benefits in terms of increased fish production, and consider alternatives that would achieve the same sound biological objectives at the minimum economic cost. As the Confederated Tribes of the Umatilla Indian Reservation know, the subject plan will be finalized in November, 1985. BPA believes the Northwest Power Planning Council should be provided the opportunity to review and act upon the plan prior to BPA implementing new projects in the Umatilla Basin.

Also see: Letter No. 4, Issue No. 12.

Letter No. 15, Issue No. 2

See previous response and Letter No. 9, Issue No. 2.

Letter No. 15, Issue No. 3

BPA will give this suggestion full consideration when negotiating for the operation and maintenance and evaluation of the Minthorn Springs facility.

Letter No 15, Issue No. 4

See comments on Letter No. 9, Issue No. 4 (ODFW).

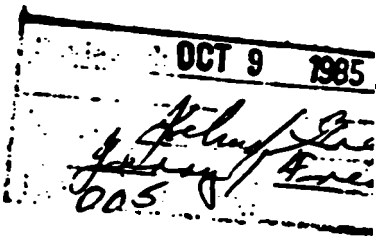
LETTER NO. 16

COLUMBIA BASIN FISH AND WILDLIFE COUNCIL

LLOYD BUILDING . • UITE1240
700 N. E. MULTNOMAH • TRLCT
PORTLAND, OREGON 97232

(503) 231-3241
FTS 429-3241

OFFICE OF
EXECUTIVE • ⌂⌂⌂♦⌧♦



October 3, 1985

Mr. John Palensky, Director PJ
Division of Fish and Wildlife
Bonneville Power Administration
PO Box 3621
Portland. OR 97208

Dear John:

In our haste to provide comments on BPA's FY 1986 implementation plan, we inadvertently overlooked Action Item 41.3 dealing with studies on white sturqeon. We have two major concerns: (1) The implementation olan only shows funding of field studies under projects 86-50 and 86-51 for two years, whereas, at least five years of work will be needed; and (2) Funding levels shown for all of the sturgeon work are grossly inadequate.

As you are aware, in 1985 BPA funded developnent of a work plan which identifies objectives, activities, and required tine frames for implementation of sturgeon studies. The main purposes of these studies are to determine the impacts of the hydroelectric system on sturgeon in the Columbia Basin and to determine whether those imacts can be mitigated. The work plan recognizes the complexity of this problem and that it would take at least five years to accolnplish the objectives. Your implementation plan shows funding for FY 1986-89 for the University of Washington's study of sturgeon genetics; but the field studies would only be funded in FY 1986-87. It should be grecgnized that the UW study is only a small component of the larger purpose of determining the impacts of the dams on the sturgeon resource. The field studies will of necessity involve a more extensive effort at achieving the overall purpose of the sturgeon work. If the field studies are not adequately performed, the UW work will have little practical use.

The question of funding level is also of critical importance to the adequate performance of these important projects. The implementation plan shows an overall funding level of $480,000 for sturqeon studies in FY 1986. We understand that the UW work has an annual cost of $85,000-$90,000. The fish and wildlife agencies have estimated that field studies on sturgeon in 1986 will cost about‘S0.8 million-$1.0 million: i.e., studies of fish populations on the mainstem Columbia River and its larqe reservoirs are difficult and somewhat costly. It is obvious, therefore, that the fundinq level for FY 1986 is inadequate. Estimates of all fundinq needs beyond FY 1986 are not yet available, but annual costs will undoubtedly be higher for FY 1987-89 than those estimated for FY 1986. Amounts shown, therefore, are not adequate.

LETTER NO 17

, WAYLAND
Director

STATE OF WASHINGTON

DEPARTMENT OF GAME

600 North Capitol Way GJ-11 • Olympia, Washington 98504-0091 • (206) 753-5700

October 9, 1985

TO: Jerry Bouck

FROM: Jack Hoverson, Power Planning Coordinator

RE: Approach to Disease Studies

I have discussed the approach outlined in our telecon of October 4, 1985 regarding disease studies with Jim Gearheard of our department. We agree that the states have, in most cases, the technology, facilities, and expertise to conduct disease studies. The most economical way to do these studies may well be to expand the states' capabilities to conduct them.

Our department does not have the facilities to deal with IHN, and BKD is not a serious problem in steelhead. We are concerned primarily with Ceratanyxa and with eye fluke. Ceratomyxa is a problem in some of our Columbia River hatcheries, and eye fluke is an affliction of wild fish in the basin. Additional funding would allow us to concentrate more effort on these diseases. Department of Fisheries has, we understand, the facilities to handle work on IHN and BKD.

We support expanding the state's capabilities to do the additional work involved in the conduct of disease studies under the Program.

JH:cv

Issues

(1)

While it is beyond the deadline for comments, we believe it is essential to reconsider the funding needs for the sturgeon work. The agencies believe this is an extremely high pr● iorfty item since the sturgeon resource has high recreational and commercial value in the region and virtually nothing has been done to date to redress hydroelectric imacts.

CBFWC staff would be pleased to meet with you and members of your staff to discuss this issue.

Sincerely,

John R. Donaldson, PhD
Chairman

lkw
C USFWS
NHFS
WDF
NPPC

BPA Responses to Issues Raised by the
Columbia Basin Fish and Wildlife Council
in LETTER NO. 16

Letter No. 16, Issues No. 1 and 2

See Comments on Letter No. 4, **Issue No. 43** (PNUCC).

BPA Responses to Issues Raised by the
State of Washington, Department of Game
in LETTER NO. 17

Letter No. **17,** Issue No. 1

BPA notes the concern for eye fluke and C. Shasta, and appreciates the support for its approach to fish health monitoring.

JBouck:tlh:5213 (WP-PJS-6735N)

APPENDIX C

FY 1986 WORK PLAN

HABITAT AND PASSAGE ENHANCEMENT

MEASURE 704(d)(1)

WORK PLAN: HABITAT AND PASSAGE ENHANCEMENT
MEASURE 704(d)(1)

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ATTACHMENT

I. INTRODUCTION

The Northwest Power Planning Council (Council) adopted amendments to the Fish and Wildlife Program (Program) on October 10, 1984. The Action Plan, found in Section 1500 of the Program, called for Bonneville Power Administration (BPA) to prepare an annual Habitat and Passage Enhancement Work Plan for implementation of Measure 704(d) (Action Item 34.5).

This work plan identifies activities to be carried out by BPA during the FY 1986 implementation of habitat and passage enhancement projects found in Measure 704(d)(l) of the Program.

The Work Plan is divided into six sections. Section I is the Introduction. Section II addresses activities associated with ongoing projects and includes a Status Report of Ongoing Projects (Table 1); FY 1986 - 1988 Habitat and Passage Implementation Schedule (Figure 1); and a discussion of deliverables for habitat and passage projects. Section III addresses the public comments on the draft FY 1986 Implementation Plan received in September-October 1985. Section IV, FY 1986 implementation discusses carryover projects from FY 1985. These projects were identified as new starts in BPA's FY 1985 habitat work plan and reviewed and commented on by the Council but not implemented in FY 1985. The monitoring and evaluation program is discussed in Section V. Sectin VI discusses prioritization of projects in Measure 704(d)(l), Table 2.

II. ONGOING PROJECTS

Table 1, Status Report Habitat and Passage Enhancement and Figure 1, FY 1986 - 1988 Habitat and Passage Implementation Schedule presents information related to ongoing projects implemented under Measure 407(d)(1) in prior fiscal years. The status report is organized into three sections: I. Research Projects; II. Evaluation Projects; and I II. Habitat and Passage Enhancement Projects. Projects presented in Section I II are organized by subbasin, beginning with the Willamette/Clackamas River subbasin and working upriver to the Salmon River subbasin. The following information is presented for each project: the project description, current project status, contract effective period, and the fiscal year/total project budget to date.

The implementation schedule graphically displays activities by phase for ongoing projects. Activities are broken into five phases: BPA procurement, plan/design, agency contract development/advertising, construction, and monitoring/evaluation. Project activities are presented for the period FY 1986 through FY 1988.

BPA Project Managers moni tor the progress of contract activities as specified in the agreement or contract Terms and Conditions (T&C's). Monitoring is accomplished througn project review and project oversight. Reports are prepared and submitted to BPA for review according to the schedule specified in the T&C's. Annual reports are reviewed by the Contracting Officers Technical Representative (COTR) prior to renewal of the agreement or contract.

Final reports are submitted to the COTR for review and approval follwoing completion of all project activities. The COTR conducts field visits to the project site and verifies that all activities have been completed as specified in the original agreement or contract. Upon the recommendat ion of the COTR the Contracting Officer (CO) certifies that the project has been completed. A copy of each report is transmitted to the Council and made available to all other interested parties.

PROGRAM NUMBER	PROJECT NUMBER	PM[1]	TITLE	PROJECT STATUS	CONTRACT TERM START DATE	CONTRACT TERM RENEWAL DATE	CURRENT FY COST	TOTAL PROJECT COST TO DATE
			I. RESEARCH PROJECTS					
	[illegible]	TSV	Inventory of Nez Perce Reservation Streams - Nez Perce Tribe Description: To compile physical and biological data of rivers and creeks flowing through the Nez Perce Reservation and develop protection and enhancement measures for the appropriate systems.	Final report on the physical habitat inventory due 5/15/85. Biological inventory to be completed by 1/31/86.	1/12/82	11/1/84	$ 52,130	$322,257
	[illegible]-73	DEJ	Deschutes River Spawning Gravel Study - Consultant/ODFW Description: Determine the present quantity, quality, and distribution of fall chinook and summer steelhead spawning gravel habitat on a 106 km reach of the Deschutes River below Pelton Dam. The data will be compared to existing baseline date and a quantitative assessment made on the extent and magnitude of the changes.	Project completed.	A-7/27/83 B-9/1/83	- -	- -	$145,738 $ 5,062
-	81-108	JCG	Warm Springs Reservation Baseline Fishery Inventory - Warm Springs Tribe Description: To collect baseline data on the Warm Springs River and tributaries and implement appropriate protection and enhancement activities.	Phase I completed in FY 1982. Phase II, baseline data collection, to be completed by FY 1990. Phase III, implementation of protection and enhancement activities, to be completed by FY 1992. Phase II and III are consecutive, ongoing projects.	9/30/81	10/1/85	$117,905	$285,042
	82-14	TSV	Development of New Concepts in Fish Ladder Design - WSU Description: To assess and document current practices in fishladder design and to explore the development of new and more efficient fish-ladder design(s) in terms of fish passage, water quantity, and economics.	Project completed.	6/4/82	-	-	$264,835

[1] PM = Project Manager: KJA/K. Anderson, TJC/T. Clune, LBE/L. Everson, JCG/J. Gislason, DEJ/D. Johnson, TSV/T. Vogel

704(d)(1) Habitat Improvement and Passage Enhancement

PROGRAM MEASURE	PROJECT NUMBER	PM[1]	TITLE	PROJECT STATUS	CONTRACT TERM START DATE	CONTRACT TERM RENEWAL DATE	CURRENT FY COST	TOTAL PROJECT COST TO DATE
II. EVALUATION AND MONITORING PROJECTS								
704(d)(1) Table 2	82-9	LBE	John Day River Habitat Improvement Evaluation - ODFW	Project terminated on 8/30/84. ODFW is preparing a statewide monitoring proposal.	6/4/82	-	-	$129,116
			Description: Measure changes in spring chinook and summer steelhead production due to habitat improvement projects and and contrast fishery benefits from enhancement activities with costs of design and construction in Clear/Granite Creeks, Camp Creek, and Deer Creek.					
	83-7		Evaluation of Idaho Habitat Improvement Project - IDFG	FY 1985 field sampling in progress.	8/15/83	3/31/86	$157,647	$393,671
			Description: (a) To evaluate the juvenile chinook and steelhead production benefits of habitat and passage improvement projects in the Clearwater and Salmon river basins in order to produce the offsite mitigation record for Idaho. (b) Passage projects on the South Fork Salmon River including Boulder and Johnson Creeks.					
	85-61		Habitat Evaluation and Monitoring/ Oregon - Consultant	Work statement and proposal request being developed.	11/1/85	10/31/86	$100,000	$100,000
			Description: Develop an agreement with the fish and wildlife agencies and/or Tribes to monitor the biological effectiveness of projects in Oregon.					
	85-62		Habitat Evaluation and Monitoring/ Columbia Basin - Consultant	Work statement and procurement document being developed.	11/1/85	10/31/86	$ 50,000	$ 50,000
			Description: Develop a contract to summarize and report the physical, biological, and cost effectiveness of projects being constructed throughout the Columbia River Basin.					
	84-11	KJA	Clackamas/Hood River Habitat Enhancement Program - Mt Hood National Forest (NF)		4/1/84	3/31/86	-	$424,006
			Fish Creek Evaluation	Evaluation in progress.			$ 80,580	
			Description: To evaluate and quantify drainage-wide changes in habitat and smolt production as a result of habitat improvement.					

PROGRAM MEASURE	PROJECT NUMBER	PM[1]	TITLE	PROJECT STATUS	CONTRACT TERM START DATE	CONTRACT TERM RENEWAL DATE	CURRENT FY COST	TOTAL PROJECT COST TO DATE
III. PASSAGE AND HABITAT IMPROVEMENT								
Willamette River/Clackamas River Subbasin								
204(d)(1) 84-11 Table 2		KJA	Clackamas/Hood River Habitat Enhancement - Mt. Hood NF		4/1/84	3/31/86		(see previous page)
			Collawash Rivers Falls Passage Feasibility Description: Construct a fishway to correct passage problems resulting from the Collawash Falls which prevent access to potential spawning and rearing habitat above the falls. Improvement: Structure and passage Habitat: 10 miles Species: Spring chinook, winter and summer steelhead, and coho Benefit: Increase of 100,546 smolts and 3,087 adults	FY 1985/1986 activities include analysis of the engineering feasibility and economic efficiency for each passage option. The preferred design option will be selected and schedule implemented.			$2,560	-
			Collawash River Drainage Habitat Improvement; Hot Springs Fork Subdrainages Description: Norhorn Creek - improved fish passage at falls would insure access to the lower 3.2 mi of creek. Pansy Creek - rehabilitate lower 0.2 mi of creek degraded as a result of the 1964 flood. Provide fish passage at 7 ft. falls which acts as a partial barrier to fish passage. Improvement: Structure and passage Habitat: Norhorn Cr. - 2.9 miles Pansy Cr. - 3.0 miles Species: Winter and summer steelhead, spring chinook and coho salmon Benefit: 7,270 smolts, 390 adults	Instream activities will include, passage improvements at three falls on Nohorn Creek and installation of structures to develop and deepen pools in Pansy Creek.			$ 27,197	-

[1] PM Project Manager: KJA/K. Anderson, TJC/T. Clune, LBE/L. Everson, JCG/J. Gislason, DEJ/D. Johnson, TSV/T. Vogel

704(d)(1) Habitat Improvement and Passage Enhancement

PROGRAM MEASURE	PROJECT NUMBER	PM[1]	TITLE	PROJECT STATUS	CONTRACT TERM START DATE	CONTRACT TERM RENEWAL DATE	CURRENT FY COST	TOTAL PROJECT COST TO DATE
704(d)(1) Table 2	84-11	KJA	Clackamas/Hood River Habitat Enhancement con't		4/1/84	3/31/86		
			Lake Branch Improvement Description: Improve quality of spawning habitat, low flow rearing habitat and provide unobstructed passage through the project area. Improvement: Instream structure Habitat: 5.6 miles Species: Summer and winter steelhead	FY 1985/1986 construction activities will include installation of 15 berm structures in lower Lake Branch and development of two side channels in McGee Creek.			$ 41,357	-
			Fish/Wash Creek Habitat Improvement Description: Improve spawning and rearing habitat for salmon and sthd. through habitat improvement measures. Improvement: Instream structure Habitat: 4 miles Species: Spring chinook, coho, winter and summer steelhead, and resident trout.	FY 1985/1986 construction activities will include development of side channel and and excavate ponds (alcoves) for rearing.			$ 59,683	-
			Lower Oak Grove Fork Habitat Improvement Description: Improve fish rearing and spawning habitat in the lower 1.5 mi of stream. Improvement: Instream structure Habitat: 1.5 miles Species: Winter and summer steelhead, chinook and coho salmon Benefit: 3,993 smolts, 7.5:1	FY 1985/1986 construction activities will include construction of 10 boulder berms and improvement of rearing habitat in two side channels.			$ 24,758	-
			Fifteenmile Creek Basin Habitat Improvement Description: Improve adult and juvenile fish passage, spawning and rearing habitat, and water quality conditions. Improvement: Passage and instream sturcture Habitat: 120 miles (30 mi NFS lands) Species: Wild winter steelhead	Construction anticipated to begin in 1985.			$ 41,501	-

PROGRAM MEASURE	PROJECT NUMBER	PM	TITLE	PROJECT STATUS	CONTRACT ITEM START DATE	CONTRACT ITEM RENEWAL DATE	CURRENT FY COST	TOTAL PROJECT COST TO DATE
706(b)(1) Table 2	86-79 (85-79)	KSA	Hatchery & Creek Basin Habitat Improvement - ODFW Description: Improve adult and juvenile fish passage, spawning and rearing habitat, and water quality conditions. Improvement: Passage and instream structure Habitat: 120 miles Species: Wild winter steelhead Benefit: 1,700 adults	Work statement under development. Plan/design phase anticipated to occur in FY 1986.	-	-	-	
	86-90 (84-26)		Little Fall Creek Fish Passage - Consultant Description: Construct fish passage facility and blast jump pools to correct passage problems resulting from two falls located at RM 11.6 and 10.4. Falls prevent salmon and steelhead access to spawning and rearing habitat above the falls. Improvement: Structure and passage Habitat: 14 miles Species: Salmon and steelhead Benefit: Potential of 2,000 adults (currently 50 utilization)	Contract under development. Project anticipated to begin in summer 1986.	-	-	-	
Hood River Subbasin								
	83-61	DEJ	West Fork Hood River Passage - ODFW Description: Design and construct a fish passage facility to correct passage problems resulting from a natural waterfall located on the West Fork of the Hood River which blocks migration of adult salmon and steelhead to potential spawning and rearing area above the falls. Improvement: Structure and passage Habitat: 23 miles Species: Summer steelhead, spring chinook, fall chinook, and coho Benefit: 2,000 adult steelhead	Completion expected 12/31/85.	4/1/83	1/31/85	-	$750,000

PM - Project Manager: KSA/K. Anderson, TJL/T. Clune, LBE/L. Everson, JCG/J. Gislason, DEJ/D. Johnson, TSV/T. Vogel

PROGRAM MEASURE	PROJECT NUMBER	PM	TITLE	PROJECT STATUS	CONTRACT TERM START DATE	CONTRACT TERM RENEWAL DATE	CURRENT FY COST	TOTAL PROJECT COST TO DATE
Deschutes River Subbasin								
704(d)(1) Table 2	83-423	DEJ	Trout Creek Riparian Enhancement - NBC Description: Develop a series of draft restoration prescriptions describing major problems of the watershed in terms of salmonid habitat production and outline alternatives for correcting these problems. Also will develop a comprehensive technical enhancement plan based on previous data collection, agency input, and draft prescriptions. Improvement: Structure and riparian Habitat: Approximately 150 miles Species: Steelhead	Project construction anticpated to begin in FY 1986.	9/27/83	9/30/85	-	$269,1[illegible]
	84-7		Coordination of Trout Creek Riparian Enhancement - SCS	Conducted in conjunction with the Trout Creek Riparian Enhancement Project.	3/1/84	12/31/85	-	$ 36.5[illegible]
	84-62		Coordination of Trout Creek Riparian Enhancement - ODFW	Conducted in conjunction with the Trout Creek Riparian Enhancement Project.	9/1/81	1/31/85	-	$ 10.[illegible]
	83-440a 83-440b 83-450	EBF	White River Falls Passage - USFS ODFW Consultant Description: Increase runs of naturally-produced anadromous salmonids in the Deschutes River by developing self-sustaining runs in the White River Basin above White River Falls. Improvement: Passage facility Habitat: Approximately 130 miles Species: Steelhead; spring, summer, and fall chinook; and coho	Project on hold pending outcome of ODFW Commission decision. BPA funding has been deferred.	4/20/83 4/1/83 12/15/83	3/31/84 3/31/85 3/31/86	- - $100,905	$ 72.0[illegible] $307.9[illegible] $29[illegible].4
John Day River Subbasin								
	84-8		N. Fork John Day River Habitat Enhancement - USFS/Umatilla Forest	Plan and design phase in progress. (Previously Projects 83-394 and 83-395)	4/1/85	3/31/86	-	$ 55,8[illegible]
			Desolation Creek Description: Increase the production potential of summer steelhead and spring chinook by improving pool:riffle ratio, constructing adult salmon resting pools, increasing quality and quantity of spawning habitat, and controlling bank erosion.	Plan and design phase in progress. Construction contracts will be prepared executed in FY 1986.			$ 45,850	-

MEASURE	NUMBER	PM	TITLE	PROJECT STATUS	START DATE	RENEWAL DATE	CURRENT FY COST	PROJECT COST TO DATE
704(d)(1) 84-8 Table 2		LBE	Desolation Creek con't	Plan and design phase in progress. (Previously Projects 83-394 and 83-395)				
			Improvement: Instream structure Habitat: 42 miles Species: Spring chinook, summer steelhead Benefit: Spring Chinook - 600 smolts Summer steelhead - 1000 smolts					
			North Fork John Day River Habitat Enhancement					
			North Fork John Day River Habitat Improvement	Project construction is in progress.			$109,006	-
			Description: Increase the amount and distribution of rearing habitat for juvenile salmon by opening side channels and the appropriate placement of inchannel structures. Improvement: Instream structure Species: Spring chinook Benefit: 5,000 smolts/yr					
6			Clear/Granite Creeks (N. Fork John Day River)	Projects completed in FY 1982, 1983, and 1984.			-	$ 50,218
			Description: Increase the potential of spawning salmon through habitat improvement measures. Improvement: Instream structure Habitat: 12 miles Species: Spring chinook Benefit: 5:1					
	84-21		Mainstem, Middle Fork/John Day River - ODFW		6/30/85	3/31/86	-	$677,596
			Mainstem John Day River	Plan and design phase in progress.			$527,940	-
			Description: Provide additional rearing habitat for juvenile salmon and steelhead Improvement: Instream structure Habitat: 23 miles Species: Spring chinook and summer steelhead Benefit: Steelhead smolt increase - 344,000; chinook smolt increase - 371,000 to 996,000					

1/ PM - Project Manager: KJA/K. Anderson, TJC/T. Clune, LBE/L. Everson, JCG/J. Gislason, DEJ/D. Johnson, TSV/T. Vogel

PROGRAM MEASURE	PROJECT NUMBER	PM[1]	TITLE	PROJECT STATUS	CONTRACT TERM START DATE	CONTRACT TERM RENEWAL DATE	CURRENT FY COST	TOTAL PROJECT COST TO DAT
704(d)(1) Table 2	84-21	LBE	Mainstem, Middle Fork/John Day River con't		6/30/85	3/31/86		
			Middle Fork John Day River Description: Provide additional holding areas for adult chinook and steelhead and improve rearing area for juveniles of both species. Improvement: Instream structure Habitat: 30 miles Species: Spring chinook, summer steelhead Benefit: Included in benefits for the Mainstem John Day River.	Plan and design phase in progress.			Included in Mainstem JD River budget	-
			North Fork John Day River Description: Open and enhance areas damaged by gold dreging activities in the 1940's. Improve rearing area for juvenile salmonids. Improvement: Instream structure Habitat: 16.5 miles Species: Chinook and steelhead Benefit: Included in benefits for the Mainstem John Day River.	Plan and design phase in progress.			Included in Mainstem JD River budget	-
	84-22		Mainstem and Upper John Day River - USFS/Malheur Forest		6/29/84	3/31/86	-	$109,414
			Upper Mainstem John Day River Habitat Improvement Description: Increase the quantity, quality, and diversity of pool habitat for juvenile steelhead and chinook salmon. Improvement: Instream structure Habitat: 3 miles Species: Steelhead and chinook salmon Benefit: Steelhead: 1400; chinook: 250	Instream structures will be installed along 3 mi of stream.			$ 30,808	-
			Middle Fork John Day River and Tribs					
			Big Boulder Creek Description: Increase the quantity, quality and diversity of pool habitat for juvenile steelhead through habitat improvement measures.	Complete Phase I, plan and design. Stream surveys of the Middle Fork and selected tributaries, and NEPA activities will be completed.			$ 49,555	-

PROGRAM MEASURE	PROJECT NUMBER	PM[1]	TITLE	PROJECT STATUS	CONTRACT TERM START DATE	CONTRACT TERM RENEWAL DATE	CURRENT FY COST	TOTAL PROJECT COST TO DATE
704(d)(1) Table 2	84-22	LBE	Middle Fork John Day River and Tribs con't		6/29/84	3/31/86		
			Granite Boulder Creek Description: Increase the quantity, quality and diversity of pool habitat for juvenile steelhead through habitat improvement measures.	Complete Phase I, plan and design. Stream surveys of the Middle Fork and selected tributaries and NEPA activities will be completed.			Included in Big Boulder Cr. budget	-
			East Fork Beech Creek Description: Increase the quality, quantity, and diversity of pool habitat for juvenile steelhead through habitat improvement measures. Improvement: Instream structure Habitat: 6 miles Species: Summer steelhead Benefit: 2:1	Project completed.			-	$ 66,414
			Canyon Creek Description: Increase the quality, quantity, and diversity of pool habitat for juvenile steelhead through habitat improvement measures. Improvement: Instream structure Habitat: 15 miles Species: Summer steelhead Benefit: 2:1	Project completed.			-	$ 43,000
	83-384		Murderers/Deer Creek Fish Habitat Description: Provide additional rearing and spawning habitat for steelhead through habitat improvement measures. Improvement: Instream structure Habitat: 40 miles Species: Summer steelhead Benefit: 3.8:1	Murderers Creek Project completed on USFS land in FY 1984. Deer Creek scheduled for compeletion on BLM land in FY 1985.	4/1/83	1/31/84	-	$ 73,515
	83-473		Cottonwood Creek Habitat Improvement - BLM Description: Provide for increased production of steelhead through habitat improvement measures. Improvement: Instream structure Habitat: 12.5 miles Species: Summer steelhead Benefit: 4.4:1	Project completed.	7/25/83	-	-	$ 40,433

[1] PM = Project Manager: KJA/K. Anderson, TJC/T. Clune, LBE/L. Everson, JGI/J. Gislason, DEJ/D. Johnson, TSV/T. Vogel

704(d)(1) Habitat Improvement and Passage Enhancement

PROGRAM MEASURE	PROJECT NUMBER	PM[1]	TITLE	PROJECT STATUS	CONTRACT TERM START DATE	CONTRACT TERM RENEWAL DATE	CURRENT FY COST	TOTAL PROJECT COST TO DA
704(d)(1) Table 2	85-71	KJA	South Fork John Day River Habitat Enhancement/Izee Falls Fish Passage - BLM Description: S. Fork - Instream placement of 1500 boulders to create scour pools. Izee Falls - Provide access to 81 mi of spawning and rearing habitat by providing access over the falls. Improvement: Instream structure and passage Habitat: S. Fk. - 10.5 miles Izee Falls - 81 miles Species: Summer steelhead Benefit: South Fork - 4.13:1 Izee Falls - 5.4:1	Construction activities to begin on the S. Fork in 1985. Work statement and procurement for Izee Falls Project will be developed in FY 1986.	9/1/85	3/31/86	$ 87,698	$ 87,698
Umatilla River Subbasin								
	84-10	TSV	Plan for Restoring Salmon and Steelhead in the Umatilla River - ODFW Description: Establish rehabilitation objectives for the Umatilla River Basin and provide detailed information on preferred projects and alternatives to acheive the adopted rehabilitation objectives. Species: Summer steelhead	Project completed.	7/15/84	-	-	$40,022
	83-434		Umatilla River Channel Study - USACE Description: Improve adult anadromous fish passage through channel modification from the Umatilla River confluence with the Columbia River to Three Mile Dam. Improvement: Passage Species: Summer steelhead	Construction activities completed fall, 1984.	2/1/84	12/31/84	-	$343,325
	83-436		Three Mile Dam Passage Study - BOR Description: Develop preliminary designs for resolving both upstream and downstream passage problems as well as develop a design for adult collection and counting facilities at Three Mile Dam. Improvement: Passage Species: Summer steelhead	Provide final designs, specifications, and construction cost estimates for fish passage facility.	5/1/84	9/30/87	$274,000	$394,000

PROGRAM MEASURE	PROJECT NUMBER	PM	TITLE	PROJECT STATUS	CONTRACT TERM START DATE	CONTRACT TERM RENEWAL DATE	CURRENT FY COST	TOTAL PROJECT COST TO DATE
704(d)(1) Table 2	83-854 86-16 86-56	TSV	Lower Umatilla River Channel Modifications below Three Mile Dam - ODFW Description: Improve passage for anadromous salmonids in the lower Umatilla River. Improvement: Passage Species: Summer steelhead	Post-construction evaluations and additional modifications to be completed by 7/31/86.	9/15/84	9/1/86	$ 99,272	$157,884
Grande Ronde River Subbasin								
	84-9	KJA	Grande Ronde Habitat Improvement Project - USFS/Wallowa-Whitman NF		7/1/84	6/30/86	-	$211,413
			UPPER GRANDE RONDE BASIN					
			Habitat Inventory and Determination of Potential Description: Inventory 38.25 mi (22.5 mi of USFS land; 16 mi of private land) of anadromous fish habitat. Habitat: 38.25 mi Species: Spring chinook and summer sthd.	Anadromous fish streams will be inventoried. Completion scheduled for 9/30/85.			$ 7,181	-
			Implementation Design Description: Implementation of the design phase will be conducted for a system of habitat improvement measures to improve spawning and rearing habitat for anadromous fish on the Upper Grande and Fly Creek. Habitat: 22.25 mile Species: Spring chinook and summer steelhead	Plan and design phase is scheduled for completion 12/1/85.			$ 16,743	-
			JOSEPH CREEK SUBBASIN					
			Habitat Inventory and Determination of Potential Description: Inventory 46.4 mi (23.4 mi on USFS land; 23 mi on private land) of anadromous fish habitat in Elk, Chesnimnus, and Swamp creeks. Habitat: 46.4 mile Species: Spring chinook and summer steelhead	Project in progress. Approximately 2.3 mi of creek will be planted to stream shade vegetation. Approximately 2.9 mi of stream (5.8 total) will be fenced.			$ 9,690	-

PM : Project Manager: KJA/K. Anderson, TJC/T. Clune, LBF/L. Everson, JCG/J. Gislason, DEJ/D. Johnson, TSV/T. Vogel

PROGRAM MEASURE	PROJECT NUMBER	PM[1]	TITLE	PROJECT STATUS	CONTRACT TERM START DATE	CONTRACT TERM RENEWAL DATE	CURRENT FY COST	TOTAL PROJECT COST TO DAT
704(d)(1)	84-9	KJA	JOSEPH CREEK SUBBASIN con't		7/1/84	6/30/86		
			Implementation Design Description: Implementation of design phase will be conducted for a system of habitat improvement measures to improve spawning and rearing habitat for anadromous fish on Chesnimnus and Swamp creeks. Habitat: 17 mile Species: Spring chinook and summer steelhead	Plan and design phase is scheduled for completion 12/1/85.			$ 9,905	-
			Elk Creek Description: Plant 2.3 mi of creek to stream shade vegetation and fence 2.9 mi (5.8 mi total) of stream. Improvement: Riparian planting Habitat: 2.3 mi planted/2.9 mi fenced Species: Spring chinook and summer steelhead	Planting of 2.3 mi of creek was completed in May 1985. Fencing scheduled for completion 9/30/85.			$ 19,918 $ 27,551	- -
			Swamp Creek Description: Plant 2.3 mi of creek to stream shade vegetation Improvement: Riparian planting Habitat: 2.3 mile fenced Species: Spring chinook and summer steelhead	Planting of 2 mi of creek is scheduled for completion in May 1986.			$ 22,638	-
			Chesnimnus Creek Description: Acquire and stabilize planting stock for use as stream shade vegetation. Improvement: Riparian planting	Planting to be conducted in May 1987 and 1988.			$ 13,284	-
			Sheep Creek Description: Approximately 2.06 mi of Sheep Creek will be planted to stream shade vegatation and approximately 156 structures will be constructed in the same stream reach to improve quality of rearing pools. Improvement: Riparian planting and instream structures. Habitat: 2.06 mile Species: Summer steelhead and spring	Planting of 2.06 mi of stream is scheduled for completion in June 1986 and construction of structures in September 1985.			$ 34,218	-

PROGRAM MEASURE	PROJECT NUMBER	PM	TITLE	PROJECT STATUS	START DATE	RENEWAL DATE	CURRENT FY COST	TOTAL PROJECT COST TO DATE
7(b)(d)(1) Table 2	84-25	KJA	Grande Ronde Habitat Improvement Project - ODFW		7/1/84	3/31/86		
			Upper Grande Ronde Subbasin (Sheep and Fly creeks and the Mainstem Grande Ronde River) Description: Prework activities will be conducted. Activities will include physical stream surveys, project planning, onsite preparation, and easement/cooperative agreement procurement.	Phase 1, plan and design, is in progress.			$ 71,173	
			Joseph Creek Planning (Swamp, Chesnimnus, Crow, Pine, and Butte creeks) Description: Prework activities will be conducted. Activities will include physical stream surveys, project planning, onsite preparation, and easement/cooperative agreement procurements.	Phase 1, plan and design, is in progress.			$ 49,603	-
			Elk Creek Description: Improve the quality and quantity of spawning and rearing habitat for salmon and steelhead through habitat improvement activities. Improvement: Instream structure Habitat: 1 mile Species: Summer steelhead and spring chinook	Fencing and installation of instream structures is in progress.			$ 97,561	-
	83-392	LBE	Peavine Creek Spawning Habitat - USFS/Wallowa-Whitman NF Description: Inventory and design a system of habitat improvement measures to improve the quality and quantity of of spawning and rearing habitat. Improvement: Instream structure Habitat: 4.5 miles Species: Summer steelhead Benefit: 2.7:1	Project completed.	9/15/83	-	-	$73,700

PM - Project Manager: KJA/K. Anderson, TJC/T. Clune, LBE/L. Everson, JCG/J. Gislason, DEJ/D. Johnson, TSV/T. Vogel

PROGRAM MEASURE	PROJECT NUMBER	PM[1]	TITLE	PROJECT STATUS	CONTRACT TERM START DATE	CONTRACT TERM RENEWAL DATE	CURRENT FY COST	TOTA PROJE COST TO
Similkameen River Subbasin								
704(d)(1) Table 2	83-477	LBE	Enloe Dam Passage - Consultant Description: Determine the most efficient and cost effective means for providing adult anadromous fish passage around Enloe Dam. Improvement: Passage Habitat: 350 miles Species: Steelhead, chinook Benefit: 98,000 steelhead and 55,000 chinook	Phase III, engineering design of passage alternatives and NEPA compliance are in progress. Fisheries plan and benefit analysis are completed. Agency actions required for final passage alternative and construction.	4/25/83	12/31/85	-	$695,8
Wenatchee River Subbasin								
	83-446 85-52 85-53	TJC	Tumwater/Dryden Passage - Consultant Description: Conduct feasibility studies to correct fish passage problems associated with Tumwater and Dryden dams. Improvement: Passage Species: Spring and summer chinook, sockeye, coho, and steelhead Benefit: 4:1 - 7:3	Phase I, engineering feasibility study, was completed in FY 1984. NEPA scheduled for FY 1985.	6/8/83	5/30/84	$120,562	
Yakima River Subbasin								
	86-75 (85-70)	JCG	Little Naches River Passage USFS/Wenatchee NF Description: Construct fish passage facility to correct passage problems resulting from Salmon Falls. Rehabilitate flood-damaged reach below falls to provide an adequate passage corridor to the fish passage facility. Improvement: Passage, instream channel modification, and riparian revegetation Habitat: 18 to 24 miles, depending on species Species: Spring chinook, coho, and steelhead Benefit: Species # smolts Spring chinook 30,300	Phase I, preliminary engineering design of passage facility, and channel rehabilitation planning and implementation, are in progress.	10/30/85	12/31/86	$ 73,188	$ 73,1

MEASURE	PROJECT NUMBER	PM[1]	TITLE	PROJECT STATUS	START DATE	RENEWAL DATE	CURRENT FY COST	TOTAL PROJECT COST TO DATE
Clearwater River Subbasin								
704(d)(1) Table 2	84-31	LBE	Clearwater Basin Agreement, Habitat Improvement - USFS/Clearwater - NF		9/84	3/31/86	-	$76,700
			South Fork Clearwater River Description: To increase salmon and steelhead smolt production through habitat enhancement measures. Improvement: Instream structure Species: Spring chinook, summer steelhead	Habitat inventories, feasibility studies, and design of enhancement measures will be conducted. Projects being developed for BPA/USFS cost sharing.			$ 44,185	
			Habitat Enhancement for Clearwater Lochsa River Tributaries Description: Increase smolt production through habitat enhancement measures. Clearwater and Lochsa River Tributaries Improvement: Instream structure Habitat: 50 miles Species: Spring chinook, summer steelhead Benefit: 10,000 chinook and 4,000 steelhead smolts	Project plan and design phase is in progress. Habitat inventories will be conducted on 50 mi of stream. Projects being developed for BPA/USFS cost sharing.			$ 32,515	-
17	84-5		South Fork Clearwater River - USFS		1/1/84	12/31/86	-	$353,048
			Red River Description: Increase the quantity and improve the quality of spawning and rearing habitat for anadromous fish. Improvement: Instream structure Habitat: Approximately 20 miles Species: Spring chinook Benefit: 15:1	Construction activities are in progress.			$ 88,648	-
			Crooked River Description: To increase natural smolt production potential of salmon and steelhead. Improvement: Structures Habitat: 17 miles Species: Chinook and steelhead Benefit: 6.22:1	Instream structures and off-site pond construction will continue into FY 1985.			$ 89,474	-

[1] PM - Project Manager: KJA/K. Anderson, TJC/T. Clune, LBE/L. Everson, JCG/J. Gislason, DEJ/D. Johnson, TSV/T. Vogel

704(d)(1) Habitat Improvement and Passage Enhancement

PROGRAM MEASURE	PROJECT NUMBER	PM	TITLE	PROJECT STATUS	CONTRACT TERM START DATE	CONTRACT TERM RENEWAL DATE	CURRENT FY COST	TOTAL PROJECT COST TO DAT
704(d)(1) Table 2	84-6	LBE	Clearwater River Habitat Enhancement Improvements - USFS Clearwater NF		4/1/84	3/31/86	-	$143,303
			Lolo Creek Description: Increase the quantity and improve the quality of spawning and rearing habitat for anadromous fish. Improvement: Instream structure Habitat: 12 miles Species: Spring chinook and steelhead Benefit: 40:1	Project to be completed in 1985.			-	$ 29,044
			Eldorado Creek Description: Remove rock barriers to correct passage problems resulting from basalt falls and associated high velocity chutes which prevent access to spawning and rearing habitat above the site. Improvement: Instream structure and blasting Habitat: 10 miles Species: Steelhead and chinook Benefit: 24,000 chinook and 12,500 steelhead smolts	Project to be completed in 1985.			-	Included Lolo Cree budget
			Crooked Fork Description: Remove rock barriers to correct passage problems resulting from rock chutes and waterfalls which prevent access to spawning and rearing habitat above the site. Improvement: Instream structure Habitat: 5.65 miles Species: Spring chinook and summer steelhead Benefit: 36,000 chinook and 21,000 steelhead smolts	Project to be completed in 1985.			-	$ 52,189
	86-76 (85-59)	JCG	Orofino Creek Passage - Consultant Description: Construct fish passage facility to correct passage problems resulting from Orofino Falls. Improvement: Passage Habitat: 130 mi Species: Spring chinook and steelhead Benefit: 72,000 steelhead smolts 3,600 adult steelhead	Work statement and procurement under development.	1/1/86	3/31/87	-	$1,200,00

MEASURE	NUMBER	PM[1]	TITLE	PROJECT STATUS	START DATE	RENEWAL DATE	CURRENT FY COST	TOTAL PROJECT COST TO DATE
Salmon River Subbasin								
704(a)(1) 85-7 Table 2		LBE	Idaho Habitat Projects - IDFG		8/15/83	3/31/86	$134,316	$393,671
			Boulder Creek Passage Description: Modify existing falls to facilitate passage of migrating anadromous fish. Improvement: Passage. Habitat: 12 miles Species: Chinook salmon and steelhead	Project completed.				$ 26,113
			South Fork Salmon River Passage Description: Remove migration barrier in tributaries of South Fork Salmon R. to achieve full utilization of natural spawning and rearing potential for anadramous fish. Improvement: Passage Habitat: 75 miles Species: Summer chinook and summer steelhead	Planning completed in FY 84. NEPA in progress. Implementation dependent upon sedimentation status in the South Fork Salmon River.			$ 75,590	-
	83-416	DEJ	Pole Creek Irrigation Diversion Screening - USFS/Sawtooth NF Description: Increase the production potential of chinook and steelhead by screening downstream migrants from the irrigation diversion. Improvement: Passage Habitat: 3 miles Species: Chinook salmon and steelhead Benefit: 70:1	Project completed.	4/1/83	-	-	$ 29,725
	83-23	LBE	Camas Creek, Idaho - USFS Salmon NF Description: Improve riparian and instream conditions to increase salmon and steelhead spawning and rearing potential. Habitat: 23 miles Species: Spring chinook Benefit: Smolt / Adults Steelhead 4,586 / 76 Chinook 24,570 / 128	Phase I, plan/design, began in FY 1984 and continuing in 1985.	6/29/84	3/31/86	-	$ 4,669

[1/] PM = Project Manager: KJA/K. Anderson, TJC/T. Clune, LBE/L. Everson, JCG/J. Gislason, DEJ/D. Johnson, TSV/T. Vogel

704(d)(1) Habitat Improvement and Passage Enhancement

PROGRAM MEASURE	PROJECT NUMBER	PM[1]	TITLE	PROJECT STATUS	CONTRACT TERM START DATE	CONTRACT TERM RENEWAL DATE	CURRENT FY COST	TOTAL PROJECT COST TO DATE
704(d)(1) Table 2	83-359	LBE	Salmon River Habitat Enhancement - Shoshone/Bannock Tribe		10/1/83	6/30/86	-	$590,466
			Bear Valley Creek Habitat Improvement Description: Enhance habitat degraded by historic mining and dredging operations. Improvement: Instream structure and riparian enhancement. Species: Wild chinook salmon and summer steelhead	Phase II, feasibility study, is in progress. Implementation scheduled to start in FY 85.			$400,697	
			Yankee Fork/Jordan Creek/East Fork Salmon River Description: Enhance habitat degraded by historic mining and dredging operations. Improvement: Instream structure Habitat: 152 miles Species: Salmon and steelhead	Phase III, stream inventory, in progress.			$143,849	-
	83-415		Alturus Lake Creek and Upper Salmon R. Flow Augmentation - USFS/Sawtooth NF Description: Enhance natural production of chinook salmon and reestablish sockeye salmon production through increased streamflow. Improvement: Instream structure Species: Chinook and sockeye Benefit: Flow augmentation alternative= 15.5:1 to 23.4:1; Water right acquisition alternative= 18.5:1	Preferred alternative has been selected Constructed is scheduled for FY 1986/1987.	4/1/83	12/31/86	-	$39,000
	84-24		Marsh/Elk/Valley/Upper Salmon River, Idaho - USFS Region 4 Description: Identify specific reaches of the Upper Salmon River, Marsh and Elk creeks where habitat improvements could lead to increased salmon and steelhead habitat and recommend, for future implementation, measures to improve habitat (e.g., fencing, streambank stabilization and instream structures. Develop a cost sharing agreement (BPA/USFS) for implementation. Improvement: Instream structure Habitat: 150 miles Species: Steelhead, spring and summer chinook	Phase I, inventory and project descriptions, is in progress. Cost sharing agreement with USFS required for implementation in FY 1986.	6/29/84	3/31/88	-	$125,400

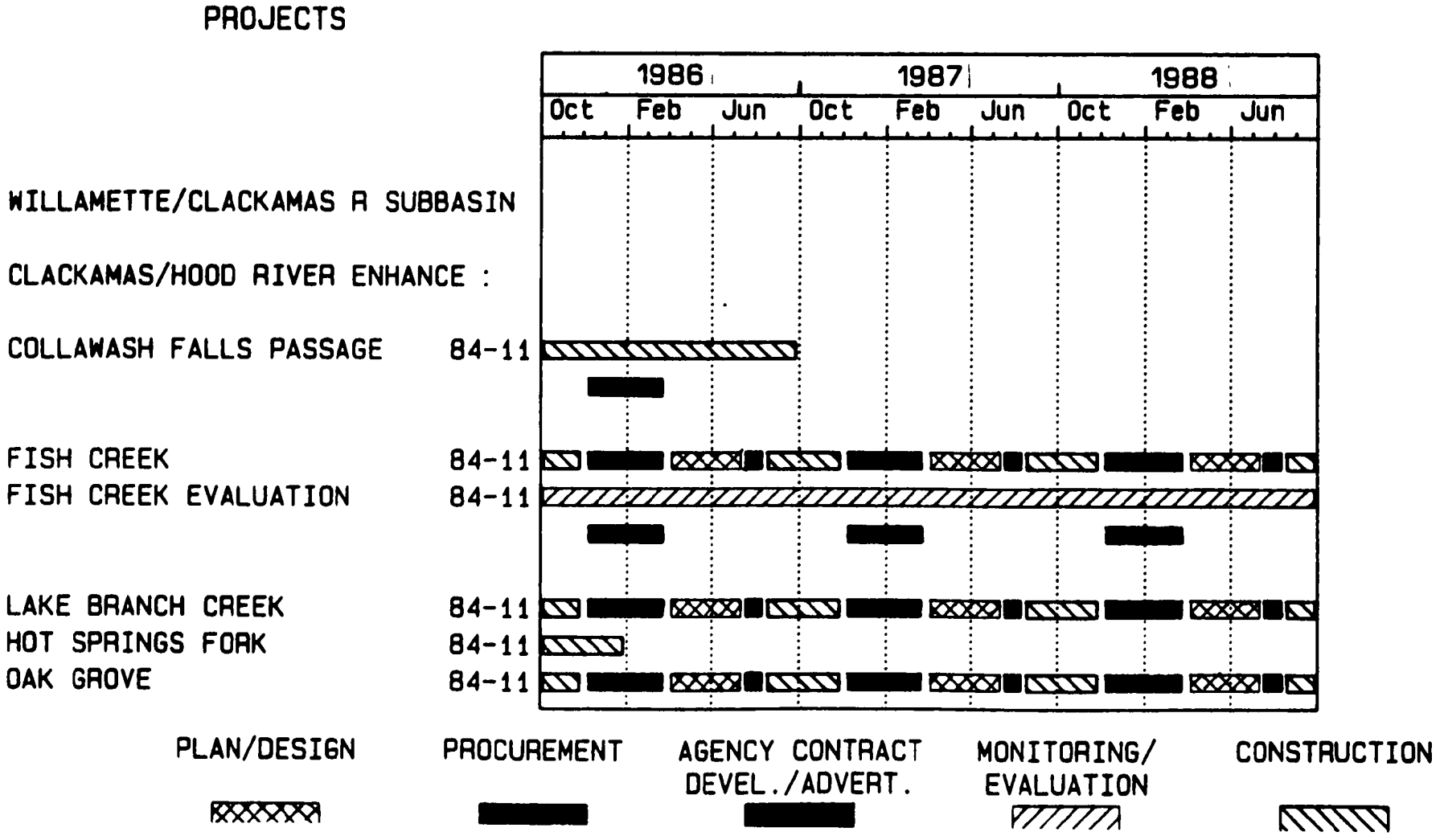
PROGRAM MEASURE	PROJECT NUMBER	PM[1]	TITLE	PROJECT STATUS	CONTRACT TERM START DATE	CONTRACT TERM RENEWAL DATE	CURRENT FY COST	TOTAL PROJECT COST TO DATE
704(d)(1) Table 2	84-28	LBE	Lemhi River Rehabilitation - Consultant Description: Identify problems, evaluate fishery potential, and recommend alternative methods for rehabilitating salmon and steelhead production in the Lemhi River. Improvement: Passage and flow enhancement Habitat: 62 miles Species: Salmon and steelhead	Phase I, engineering feasibility study and fisheries evaluation, will occur in 1984-1985. Completion of feasibility study scheduled for December 1985.	9/84	9/30/85	12/31/85	$168,710
	84-29		Panther Creek - Consultant Description: Conduct engineering feasibility and cost analysis for historic mining reclamation to remove toxicity problem for fish passage. Evaluate potential spawning and rearing habitat for anadromous fish and recommend alternatives for habitat improvement measures. Improvement: Passage Habitat: 100 miles Species: Spring chinook and steelhead	Phase I, engineering and feasibility study, will occur in 1984-1985. Selection of preferred alternative will occur in FY 1986. Construction planned for FY 1986-1988.	8/27/84	9/15/85	-	$235,170

KAnderson:kja (WP-PJS-6235N)

[1] PM : Project Manager: KJA/K. Anderson, TJC/T. J. Clune, LBE/L. Everson, JCG/J. Gislason, DEJ/D. Johnson, TSV/T. Vogel

FIGURE 1

FISCAL YEARS 1986-88
HABITAT & PASSAGE IMPLEMENTATION SCHEDULE



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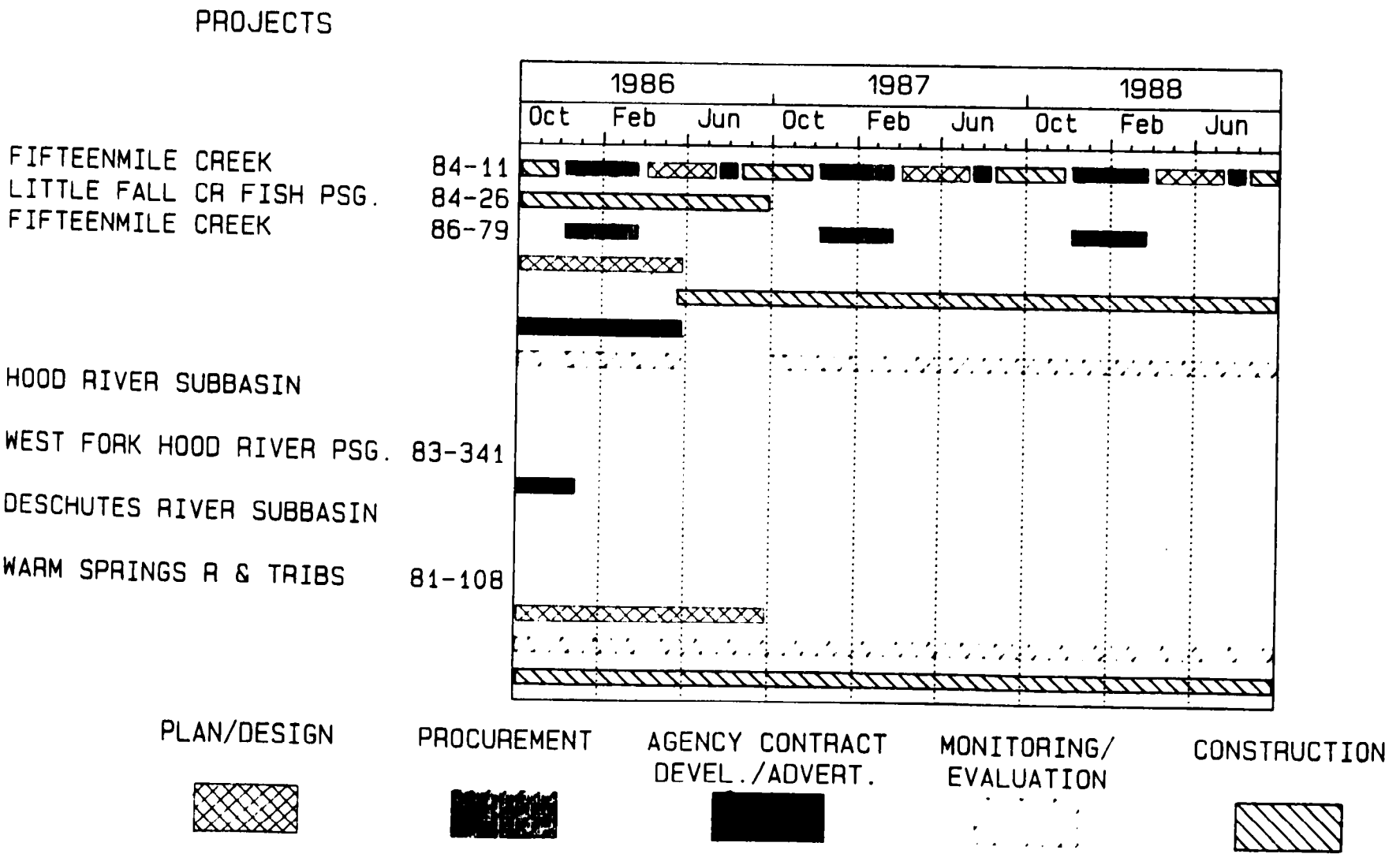
HABITAT & PASSAGE IMPLEMENTATION SCHEDULE



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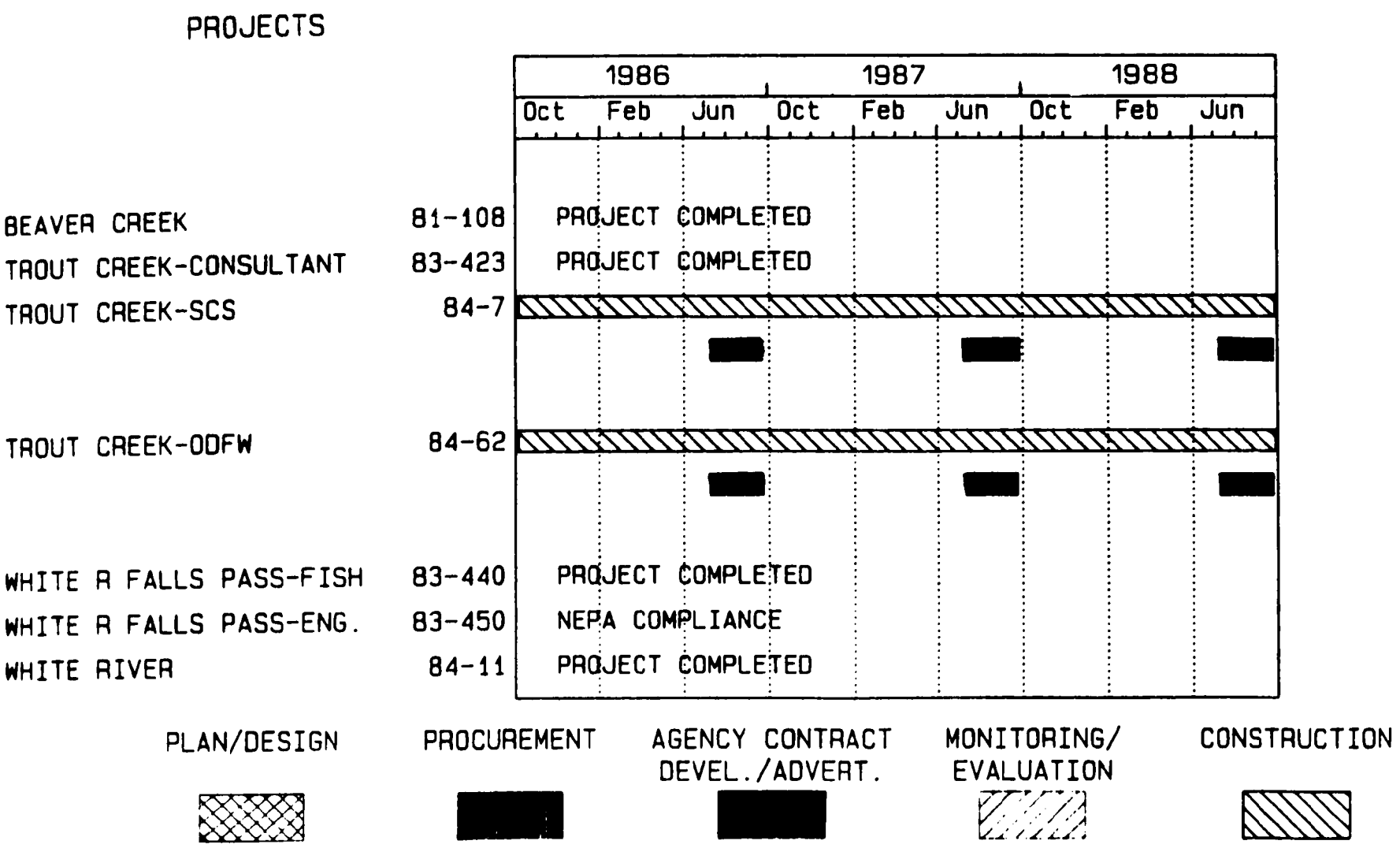

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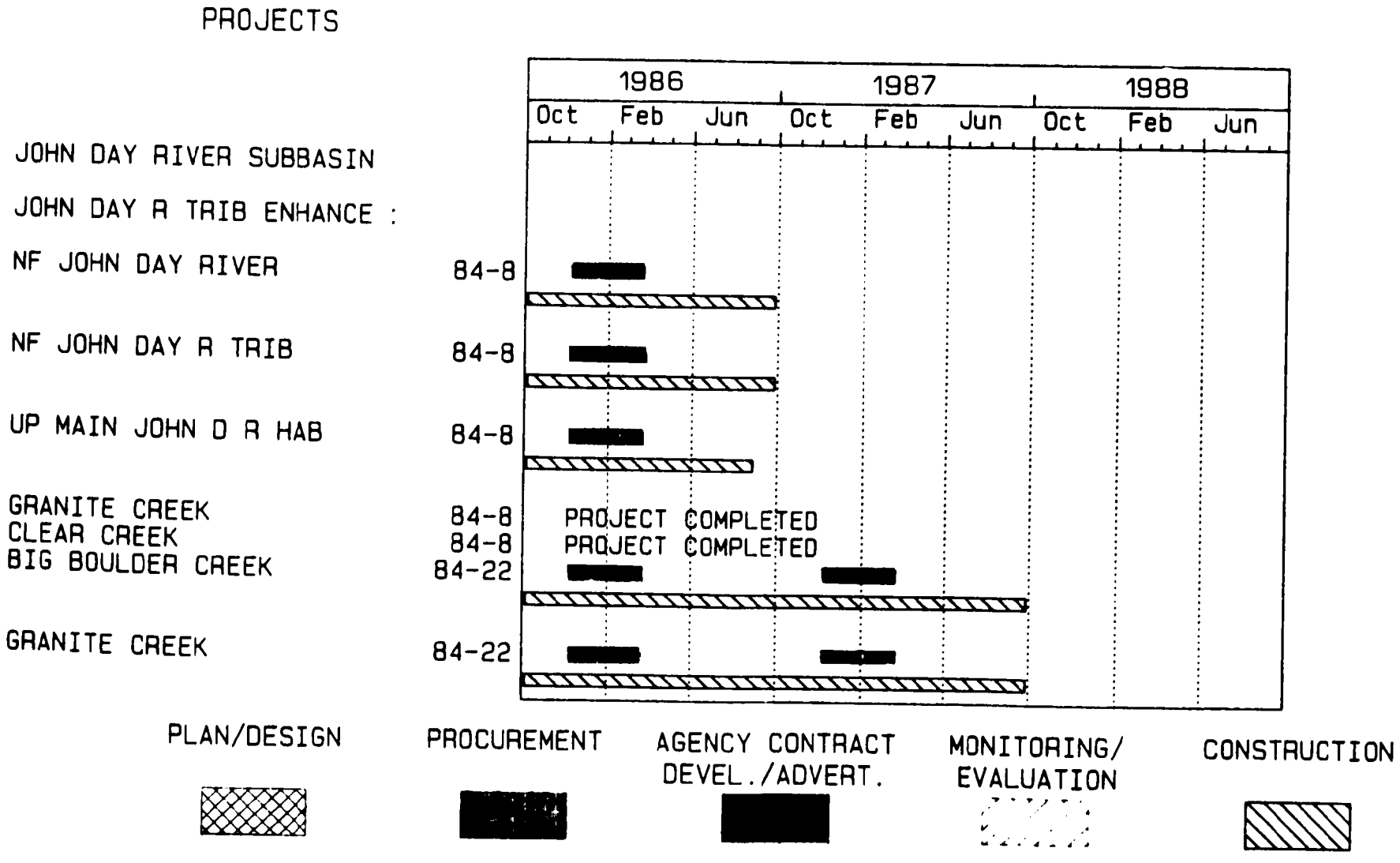

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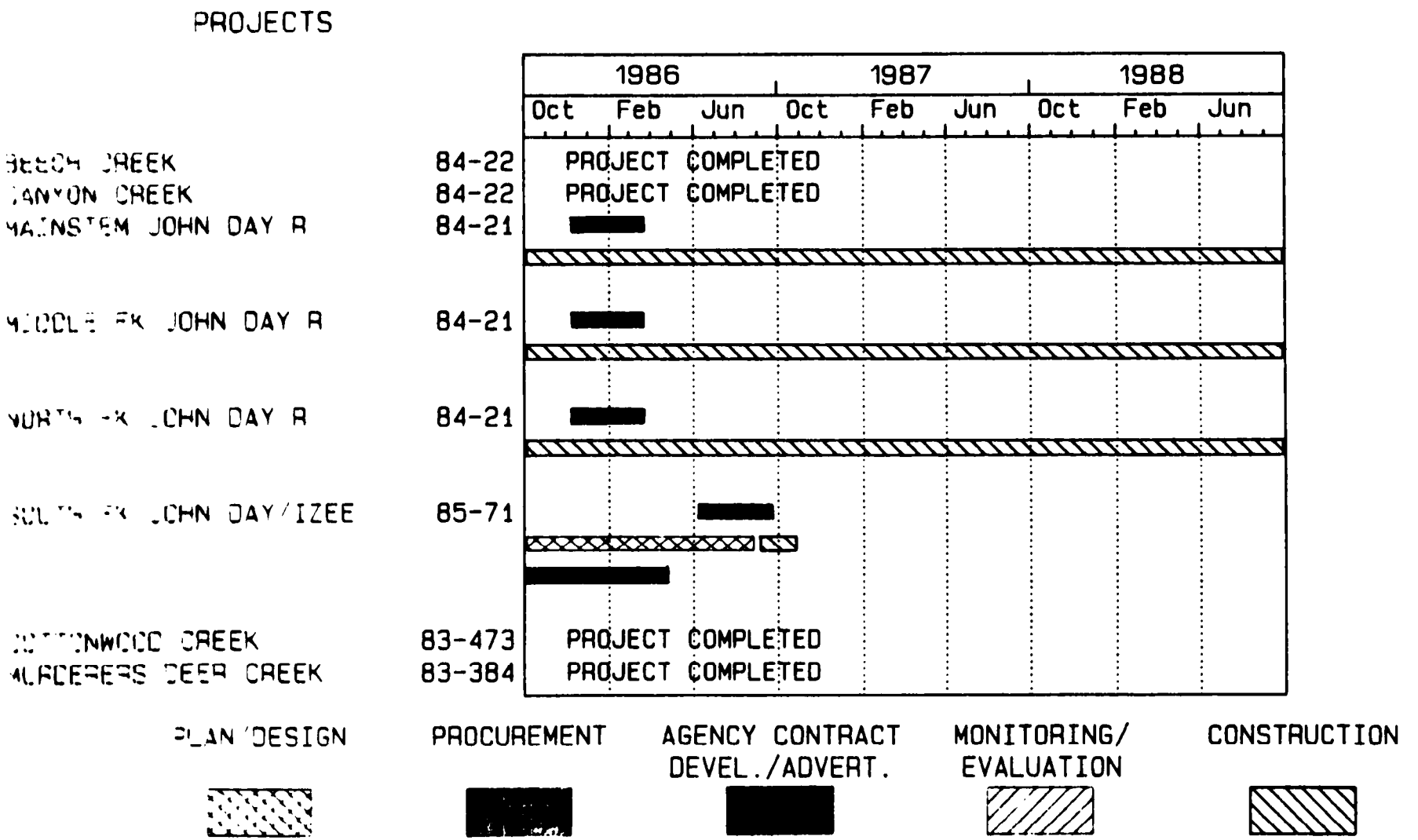

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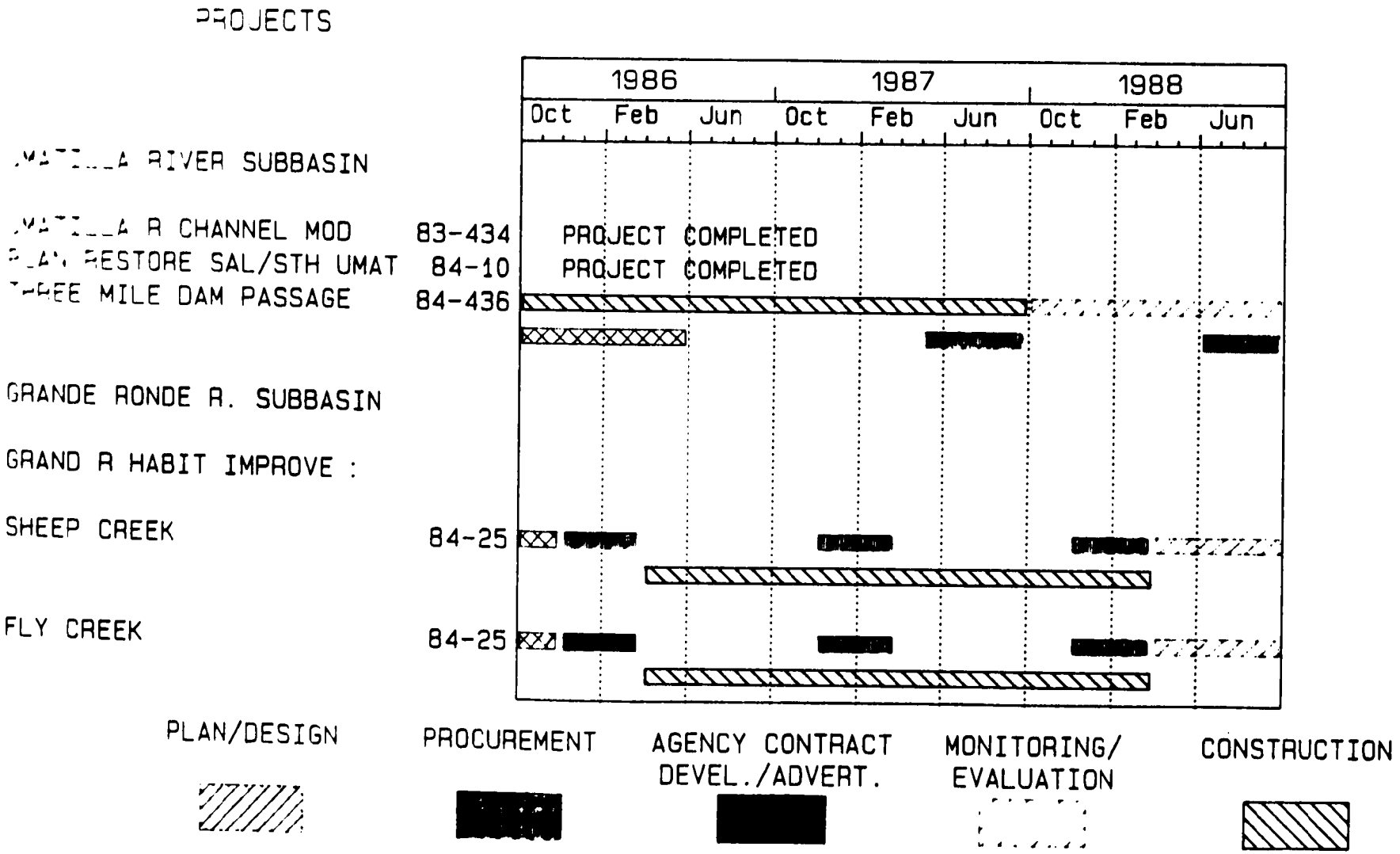

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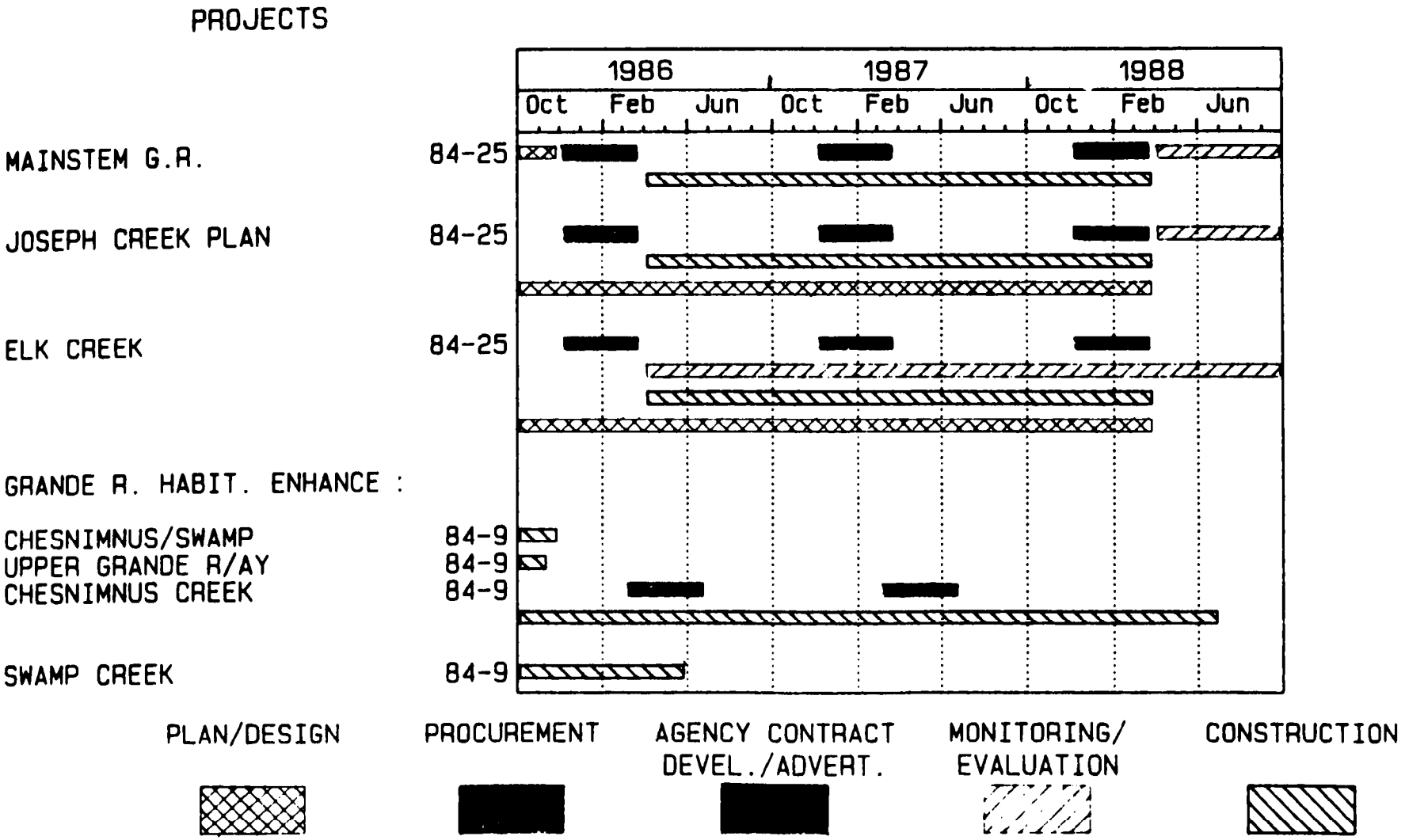

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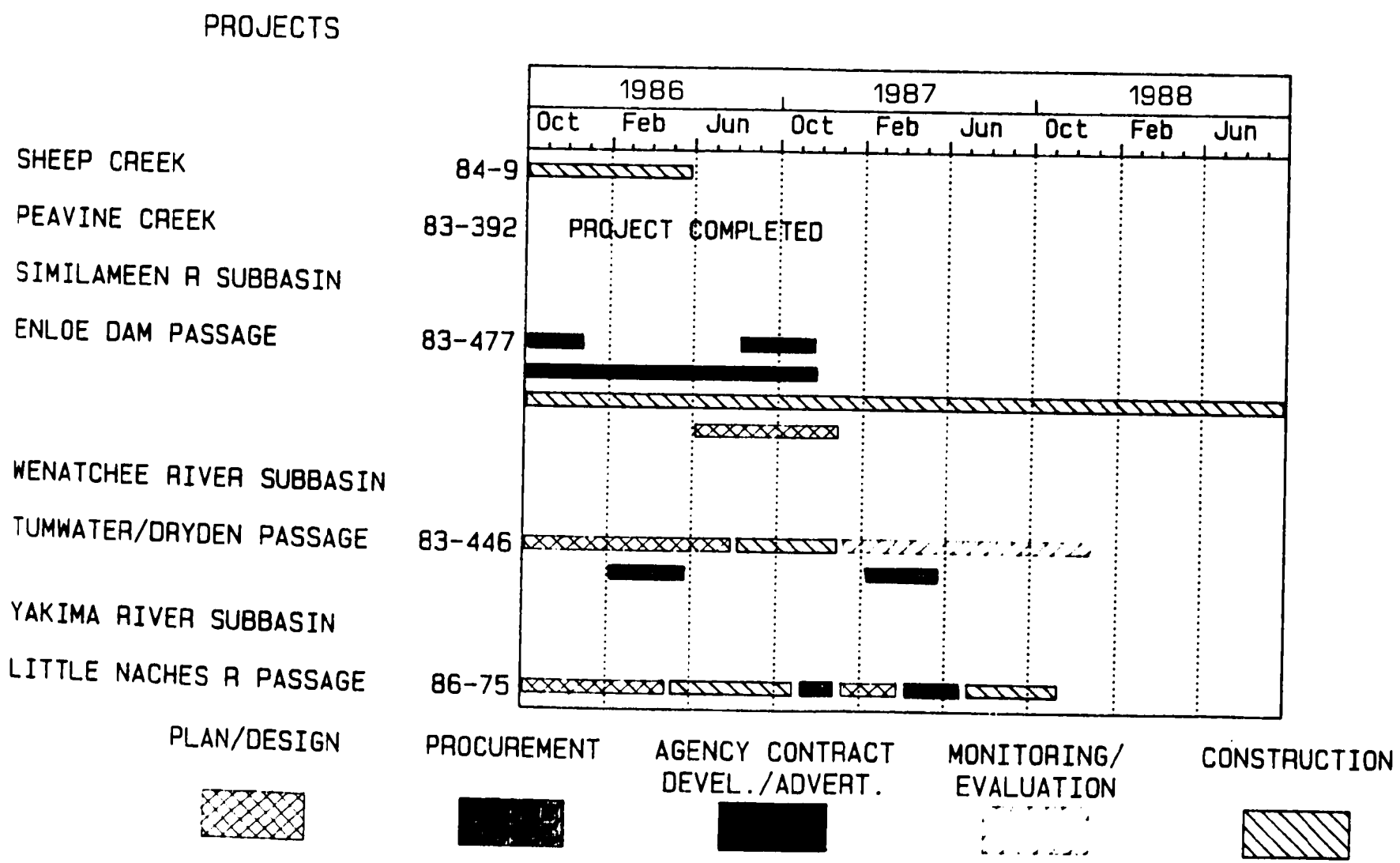

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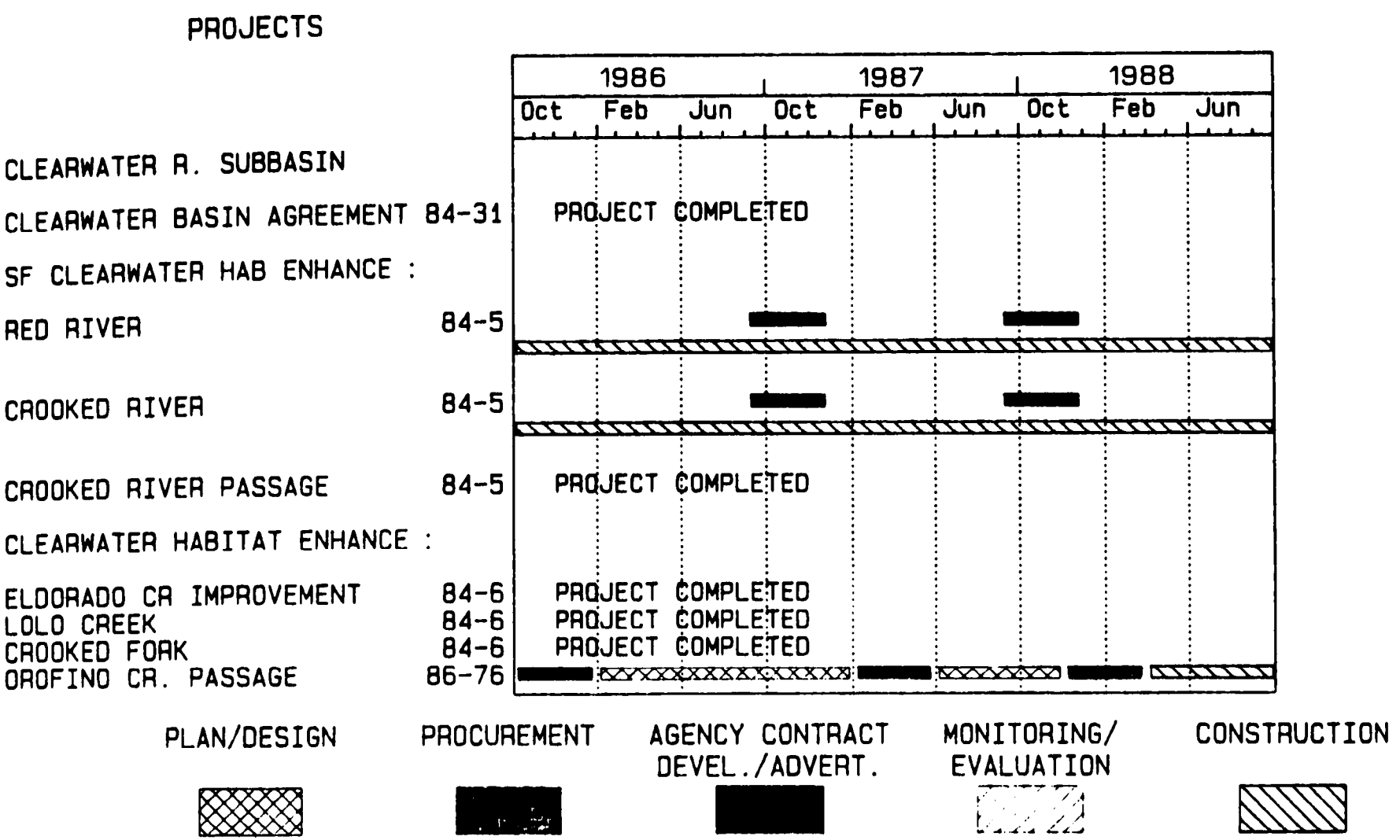

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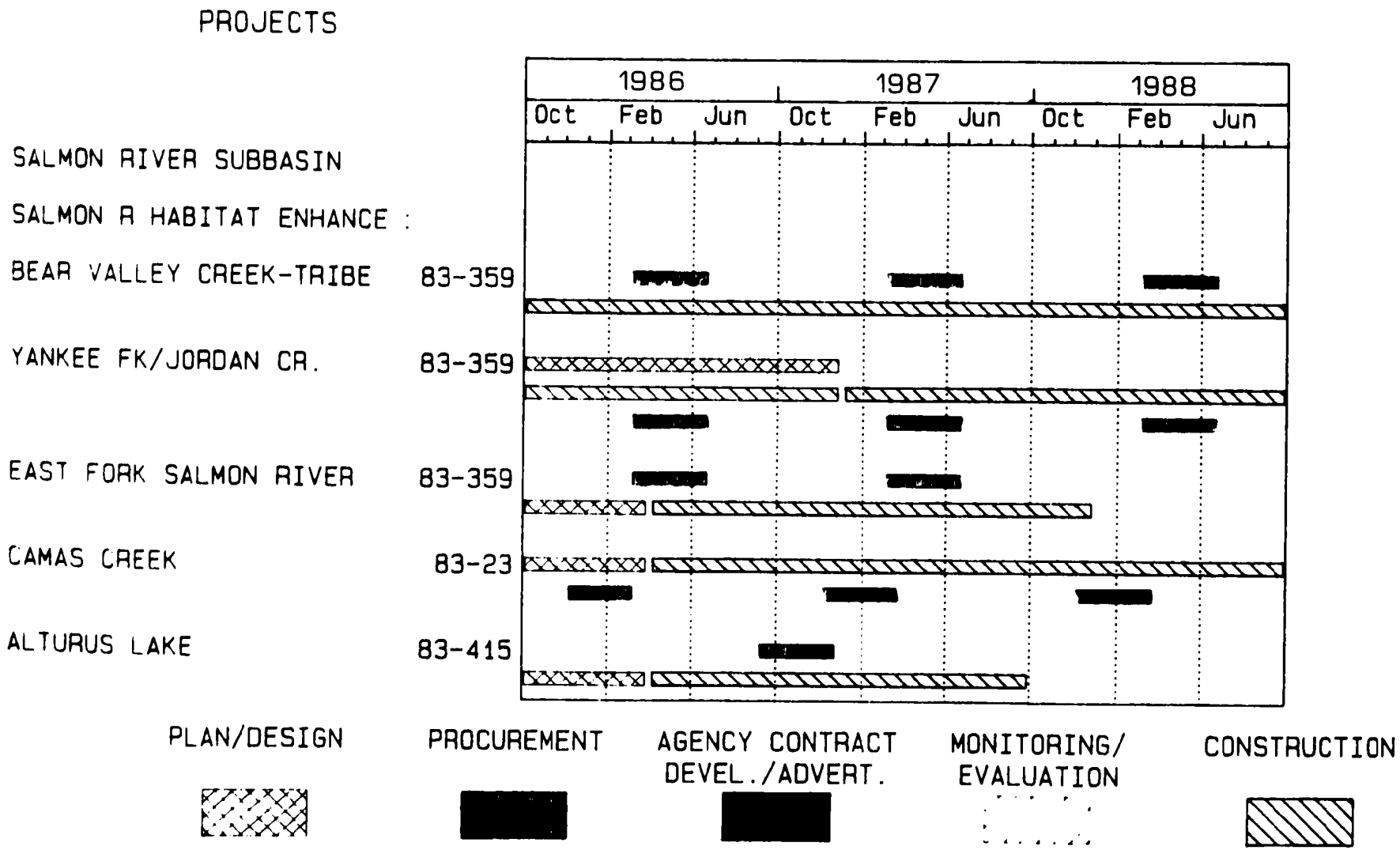

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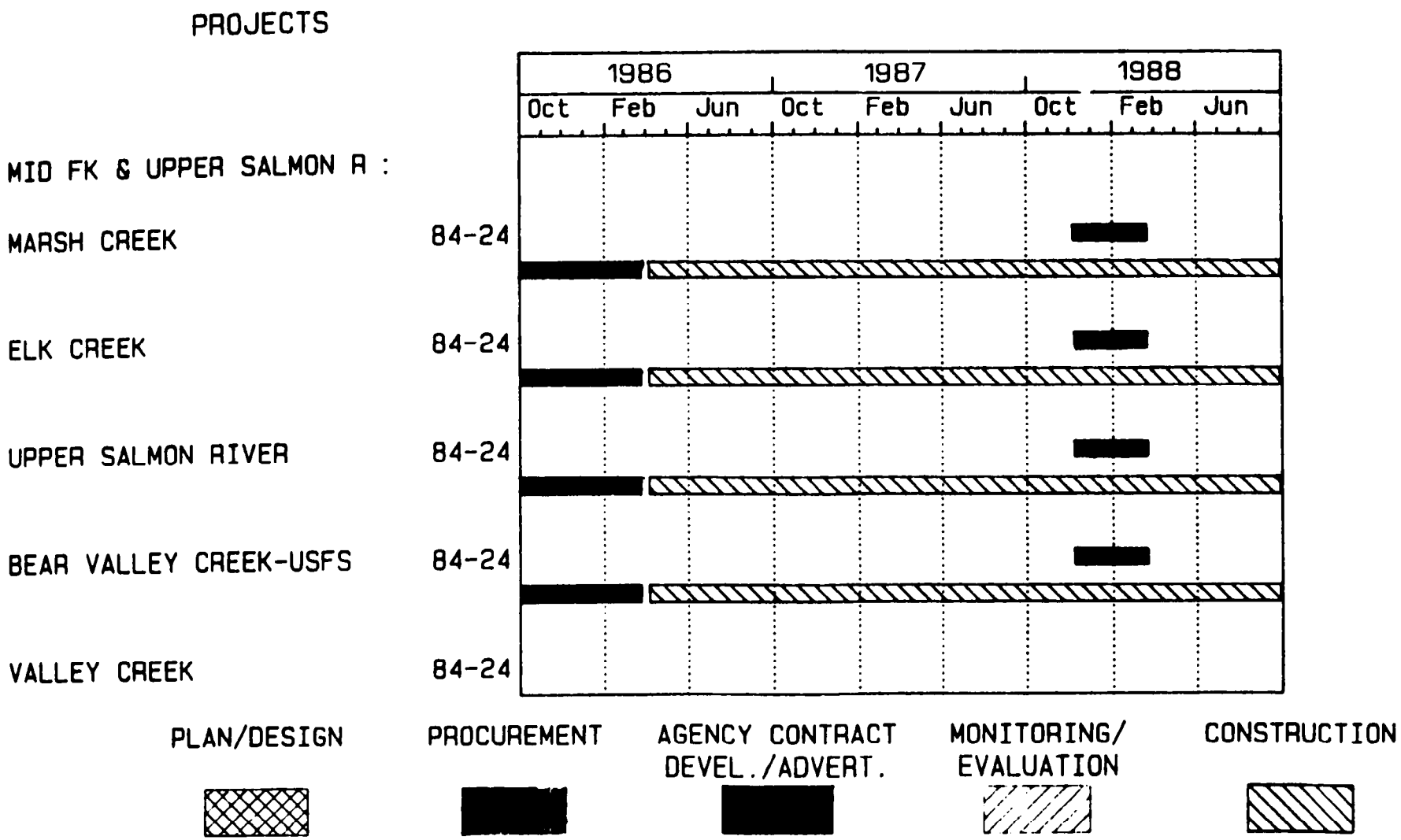

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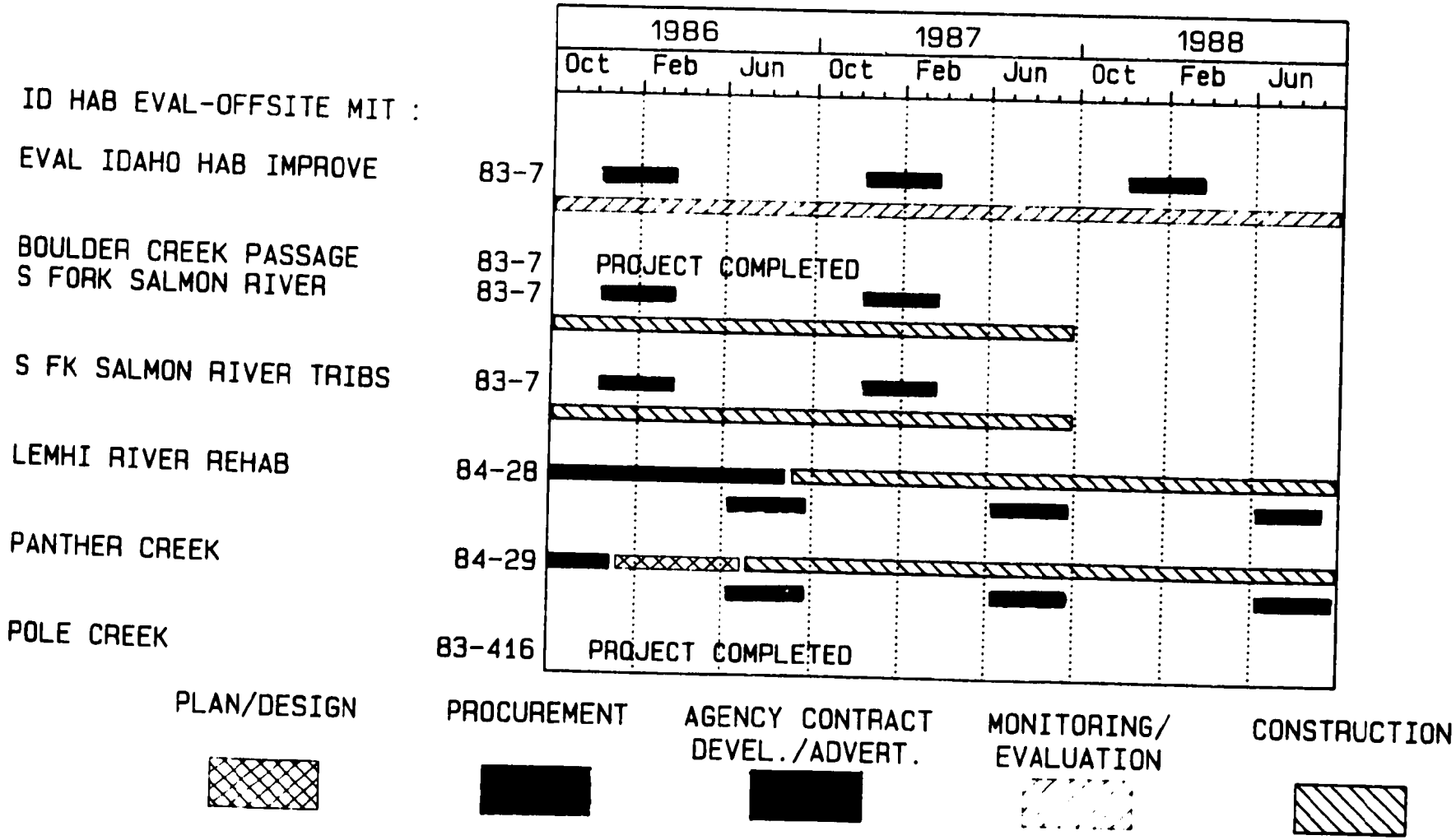


III. PUBLIC COMMENTS

The consultation process on the FY 1986 Implementation Work Plan (Action Item 39.2) produced several agency and Tribal comments on Measure 704(d)(l), Habitat Improvement and Passage. These comments can be categorized as follows:

1) Too much emphasis on habitat and passage improvement sections in the Program;

2) Not enough emphasis on an evaluation and monitoring program;

3) Several recommendations requesting initiation of new projects, some in new subbas ins ;

4) BPA should be prepared to modify this section of the Program to respond to the results of the legal negotiations and settlement anticipated in U.S. vs. Oregon; and

5) No crediting policy on project implementation.

BPA has altered its FY 1986 habitat and passage improvement implementation activities in response to these general comments. BPA will not add new projects in FY 1986; will add new projects in future years only as ongoing projects are completed; will complete funding of several projects accepted in the FY 1985 work plan, but not funded during FY 1985; will initiate an aggressive evaluation and monitoring program; and will begin development of a procedure for crediting projected and actual increases in fish production attributable to BPA sponsored habitat improvements. This new direction for implementation is described in more detail in the following Section.

IV. FY 1986 IMPLEMENTATION

BPA Division of Fish and Wildlife will continue implementation of five projects in FY 1986 that were identified for implementation in the FY 1985 work plan but were not funded during FY 1985 due to incomplete agency consultation and BPA staff workload. These projects are Fifteenmile Creek, South Fork John Day River - Izee Falls, Orofino Creek, Little Fall Creek, and the Little Naches River. A detailed description of each project is included in the Attachment, FY 1986 Implementation. In addition, information addressing the biological criteria found in Measure 704(d)(l)(A)-(D) is included for each project.

BPA will not solicit or accept unsolicited proposals for new projects in FY 1986. Instead, BPA will focus its efforts on the implementation of the five remaining FY 1985 projects, ongoing habitat and passage projects, establishing an effective monitoring and evaluation program, developing a crediting policy, and prioritizing projects identified in Measure 704(d)(l), Table 2. New projects will be undertaken in outyears as ongoing projects are completed, pursuant to the priorities established during the FY 1986 prioritization process (discussed in Section VI).

V. EVALUATION AND MONITORING

Program Measure 704 (d)(l) calls for the "...evaluation of [project] effectiveness which shall be in terms of specific subbasin production enhancement and applicability to other subbasins." Discussions with the Council's fish and wildlife staff clarified the recommendation of 704 (d)(l) language to be the evaluation and monitoring of the effectiveness of individual habitat and passage improvement projects. While ongoing BPA habitat and passage projects have individually been monitored for physical (habitat) and biological (fish) changes, the evaluation of various habitat projects in different subbasins and geomorphic habitat types for the purpose of quantifying fish benefits from projects has only been partially developed.

Evaluation and monitoring of habitat and passage projects is necessary for several reasons, prime among these being: verification of pro jetted versus actual fish production (project benefits) and verification of the efficacy of various habitat projects. Generally, two types of monitoring efforts are being conducted in the Columbia River Basin at this time: "general" monitoring, which is only capable of predictive measurements; and "intensive" monitoring, which is capable of more precise measurements of production levels achieved by habitat projects. Intensive monitoring is costly, frequently exceeding the cost of the specific habitat projects being implemented. For this reason, BPA will initiate an evaluation and monitoring effort that utilizes a combination of both the general and intensive approach.

There is a distinction between general and intensive monitoring of the various habitat projects being implemented under Measure 704 (d)(l) (Figure 2). Each project has a predicted fish production benefit that is expected to be realized after some form of habitat improvement (e.g., barrier removal, side channels, instream structures, and/or riparian enhancement). General monitoring involves the measurement of pre- and post treatment physical (habitat) and biological (fish) changes, but only does so through the summer low flow season and therefore measures population changes in terms of juvenile density. Actual smolt production is not measured, but is predicted based on a survival estimate. The intensive monitoring effort measures the actual smolt output, thus verifying the survival between the juvenile and smolt stage. If intensive monitoring is related to various habitat projects and geomorphic types (generally by subbasins), the reliability of predicted project benefits is improved and the relative merit of habitat improvements can be compared.

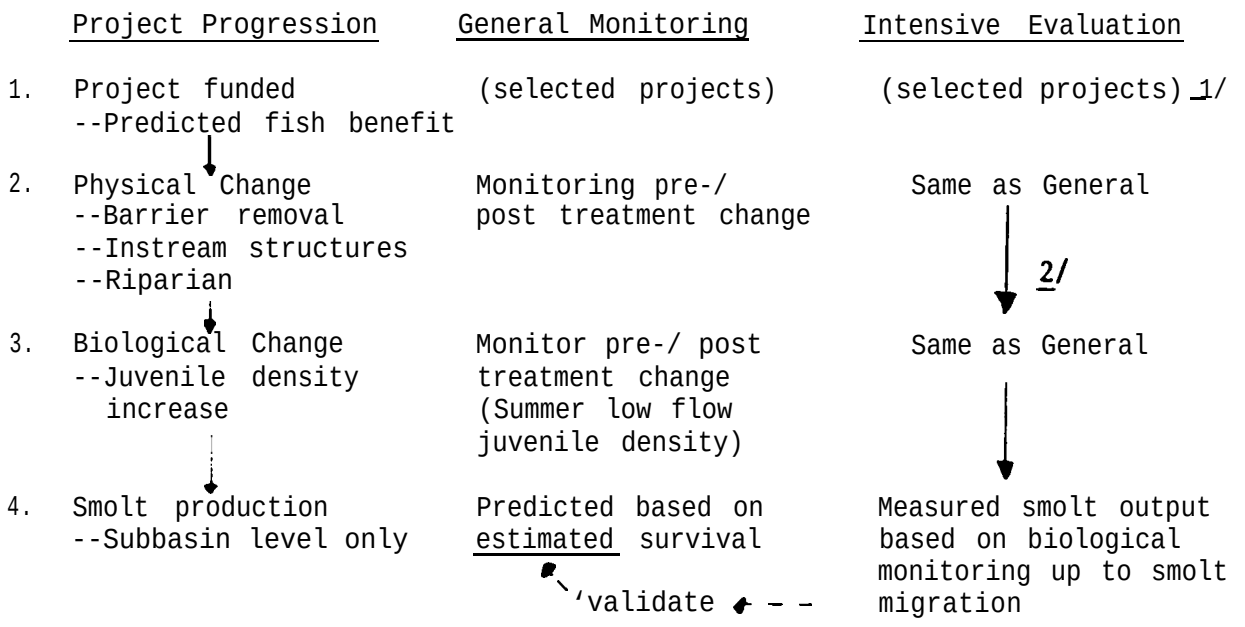
BPA has established several objectives to guide the development of the evaluation and monitoring program:

- General and intensive monitoring shall be developed together, with emphasis on implementing additional intensive sites in FY 1986;

- General monitoring shall consist of pre- and post measurements of both physical and biological conditions; ongoing project contractors shall determine pre- and post physical conditions whereas state agencies and/or Tribes can determine biological conditions;

Figure 2

General/Intensive Evaluation and Monitoring Program



1/ Intensive evaluation will be undertaken at selected sites within subbasins that represent various habitat projects and geomorphic habitat types.

2/ Solid lines reflect activities that are already underway and dashed lines reflect work yet to be initiated.

- Intensive study (geomorphic) sites will be implemented to determine actual smolt production and to develop extrapolation factors for relating the general and intensive approaches;

- Smolt production estimates will be utilized to predict benefits on similar streams within the subbasins and to improve the initial predicted benefits;

- Intensive study sites will be selected in consultation with the fish and wildlife agencies and Tribes and based upon specific criteria;

- General and intensive evaluations will be conducted via methods and design used by Holubetz, 1985 (general) and Everest, 1985 (intensive) and ;

- BPA will take the lead role in selection of intensive monitoring projects and contractors.

During FY 1986, BPA will take the lead in development of this evaluation and monitoring program. BPA will rely upon the region's fish and wildlife agent ies, Indian tribes, and land managers for much of the technical guidance and participation needed to develop and implement the program. The ultimate goal of this effort will be to achieve more precise estimates of fish benefits, to improve passage and habitat improvement techniques for implementing other projects throughout the Columbia River Basin, and to analyze their cost effectiveness.

The BPA action schedule for evaluation and monitoring is as follows:

October - November, 1985	BPA/Council agreement on work plan
December 1985	Habitat Committee consultation
January - March, 1986	BPA call for evaluation and monitoring proposals
March - June, 1986	BPA initiates contracts for intensive and general monitoring

Another aspect of BPA's FY 1986 evaluation program will focus on 704 (d)(l) projects funded in previous fiscal years. While data associated with individual projects has been collected, it has not been summarized and made available in a standardized format. Consequently, BPA will

- Summarize biological and physical data collected for projects in FY 1983 and FY 1984;

- Develop a standardized reporting format for such data;

- Evaluate cost effectiveness relative to fish benefits for individual projects;

- Recommend changes in methods for ongoing projects, based on this data analysis ; and,

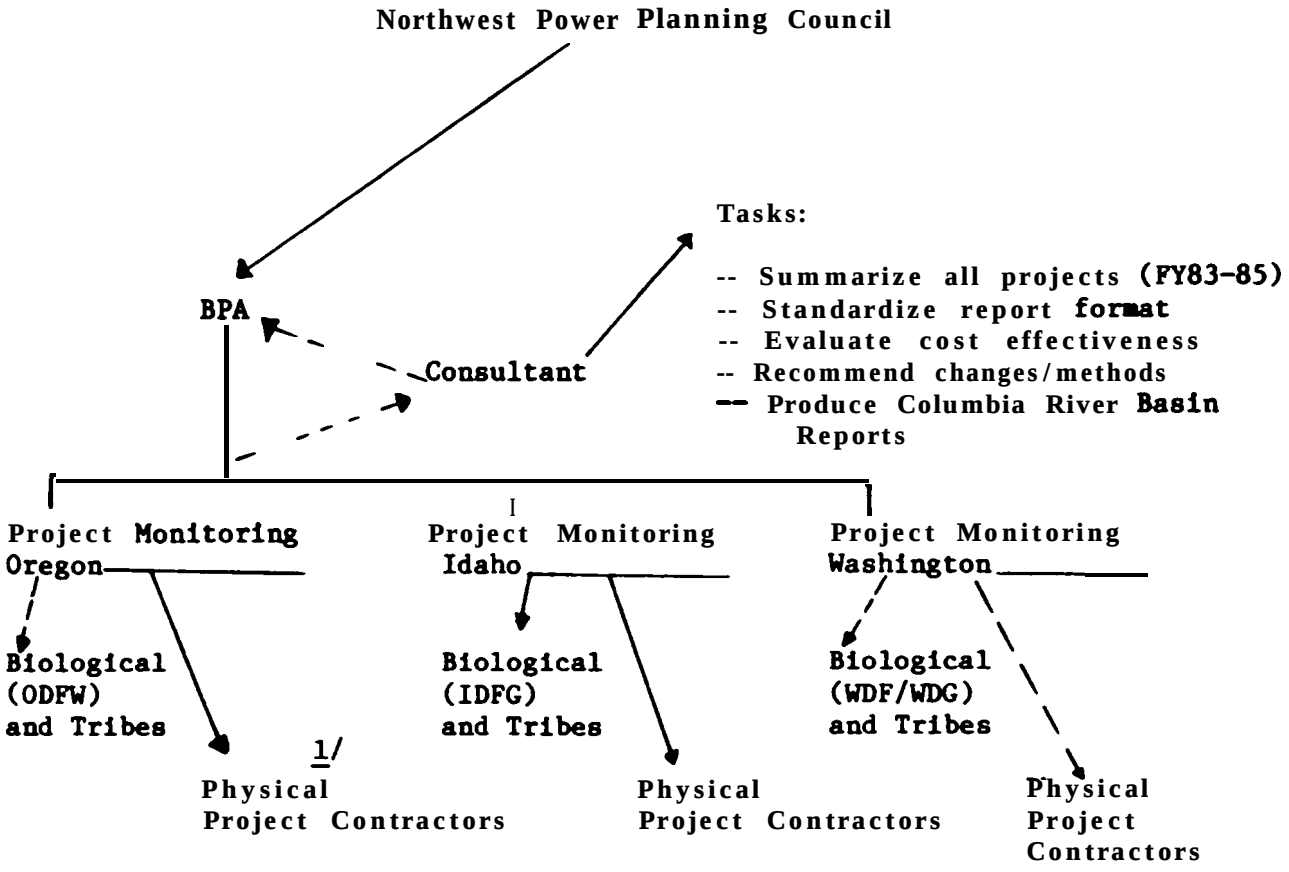
- Produce a Columbia River Basin habitat and passage improvement report.

The approach identified above is schematically diagrammed in Figure 3. BPA implementation of the evaluation and monitoring program (Figure 2) will be expanded in FY 1986 and continue to full implementation in FY 1987-1988. Emphasis in FY 1986 shall be placed upon implementing the intensive evaluation projects and developing the relationship to ongoing general monitoring. The annual evaluation report preparation (Figure 3) shall be implemented early in FY 1986.

Figure 3

Measure 704 (d)(l)

Annual Evaluation Report



1/ Solid lines reflect activities that are already underway and dashed lines reflect work yet to be initiated.

VI. PRIORITIZATION OF MEASURE 704(d)(l), TABLE 2 PROJECTS

Program Measure 704(d)(l), Table 2 identifies over 150 individual projects for implementation in approximately 23 subbasins throughout the Columbia River Basin. No priority for implementation of individual projects is provided. Implementation of projects has been left to BPA, working closely with the fish and wildlife agencies, Tribes, and land management agencies and conveyed to the Council as the 704(d)(l) annual work plan. The Council reviews the work plan to determine the consistency of BPA actions with the Program, the focus of BPA's habitat funding actions, and conformance with other priorities of the Program (e.g. upriver emphasis, wild vs. hatchery stocks, etc.).

Selection of habitat and passage improvement projects in past years has been handicapped by not having a regionally or state prioritized list of projects. As a result, much of BPA's efforts has, by necessity, been focused on development and coordination of projects rather than on implementation.

During FY 1986 BPA will initiate efforts to develop a list of prioritized projects in Measure 704(d)(l), Table 2. The process will involve coordination among BPA, the fish and wildlife agencies, Tribes, land management agencies, and the Council staff. Prioritization of projects will simplify future BPA implementation efforts and the focus of personnel (both BPA's and that of the agencies and Tribes) can be directed towards implementing projects based on their appropriate importance to the anadromous fishery resource. BPA expects this prioritized list to be reviewed annually and updated, prior to any solicitation for new projects.

LEverson:kjs(WP-PJS-6508N)

ATTACHMENT

FY 1986 IMPLEMENTATION

LITTLE FALL CREEK
OROFINO CREEK
LITTLE NACHES RIVER
FIFTEEN-MILE CREEK
IZEE FALLS

LITTLE FALL CREEK FISH PASSAGE

WILLAMETTE/CLACKAMAS RIVER

PROJECTS	83-385	Fish Creek and Wash Creek Evaluation of Fisheries Enhancement Projects
	84-11	Collawash Falls Fish Passage Feasibility Studies
	84-26	Little Falls Creek Fish Passage

PROGRAM **MEASURE:** 704(d)(l) Table 5

PROJECT SYNOPSIS

These projects deal with habitat improvement in the Willamette and Clackamas Rivers and are intended to enhance natural production in the watershed by improving passage on tributary streams, and providing adequate spawning and rearing habitats for spring chinook salmon, coho salmon, and summer and winter-run steelhead.

Enhancement will be achieved by providing passage over natural obstructions in the Clackamas River system (Collawash Falls and three other small barriers), and passage into four tributaries to Fish Creek that **are** blocked by three culverts and a 15-foot cataract. Instream structures will be used to increase rearing habitat in Fish Creek and Wash Creek.

A. An explanation of the sound biological basis for project selection, taking into account these factors:

i. Existing smolt production, existing potential for smolt production and potential with habitat or **passage** improvement.

Fish population estimates in the Fish Creek/Wash Creek project .(83-385) projected a coho smolt production of 2,800 and 8,900 for 1982 and 1983, respectively. Steelhead smolt production was estimated at 15,040 and 15,800 for 1982 and 1983. No estimates were made for chinook smolt production. 1/

Project 83-385, one permanent off-channel pond (4600 m^2) in Fish Creek is expected to increase coho production by 5,760 fish, or 60-190 percent. Three gravel recruitment structures (boulder berms) in Wash Creek are expected to increase steelhead smolt production by 1000 smolts per year. 1/

The increase in annual smolt production associated with improved fish passage at Collawash Falls is estimated to be 59,600 fish. 2/

ii. Existing escapement and potential escapement.

Counts of upstream migrants at North Fork Dam, Clackamas River indicate that escapement for coho salmon averaged 2,409 adults during the period of 1959-60 through 1968-69, and 1,871 adults during **the** period of 1969-70 through 1982-83. Steelhead counts averaged 2,016 fish and 4,564 fish during the same periods. A major hatchery program changed

both the size and timing of the steelhead run. Coho escapement figures have declined in the last decade. 1/

Passage enhancement at Collawash Falls could increase the number of harvestable adults by 3,945 fish, estimated from increased smolt production. 2/ The breakdown by species was not available.

Projected chinook and coho salmon escapement in Fish and Wash Creek6 were not available. Increased steelhead smolt production from improvements on Wash Creek would be expected to increase escapement.

iii. Existing wild and naturally spawning stock trend6 and conditions.

Steelhead trout runs were supplemented with hatchery fish in 1971, which changed both the size and timing of the run. Previous to the hatchery program, most of the steelhead were winter-run. The upper Clackamas run now consists of both summer and winter-run fish. The steelhead run in Fish Creek is stable. 1/

Coho salmon runs have declined dramatically in the last decade. In Fish Creek, suitable rearing habitat limit6 potential production. The most productive waters for coho juvenile and smolt production were beaver ponds. which comprise only 0.3 percent of the habitat. 1/

Spring chinook salmon runs in the upper Clackamas have been fairly constant in the last twenty years. During the 1960'6 the run averaged 580 fish, while totals in the 1970's averaged 640 fish. In Fish Creek, 31, 83, and 11 chinook salmon redds were counted in 1981-1983, respectively. 1/.

iv. Benefits to multiple anadromous species and runs.

Improvement of passage at Collawash Falls will benefit spring chinook salmon coho salmon, and winter and summer-run steelhead. 2/

Based on available spawning and rearing habitat, steelhead are at ideal levels in Fish Creek. Juvenile coho salmon prefer beaver pond environments in the Fish Creek system. Improvement or construction of beaver pond6 would benefit coho salmon through increased rearing habitat. The addition of boulder berms would benefit chinook salmon by creating more pools, which are used as both spawning and rearing habitat. 1/

The addition of three boulder berm6 in Wash Creek would create more steelhead spawning habitat and increase smolt production. Coho salmon would benefit by the addition of boulder berms to the Fish Creek, creating more pool habitats, and provide increased spawning habitat as they fill in with gravel.

v. Extent and condition of habitat available through passage restoration.

Improvement of passage at Collawash Falls would increase habitat availability by 10 miles of stream bed containing 12,000 square yards of spawning gravel. Above Collawash Falls, three smaller falls block an additonal 8.5 miles of stream habitat. 2/ Four tributaries to Fish Creek have impaired passage. Three tributaries are blocked by culverts and a fourth by a 15-foot cataract. Improved access would access 4 miles of habitat. Improvements and evaluation are planned for FY 85 through FY 87. 2/

vi. Requirements for hatchery supplementation, including genetic and disease considerations.

This project deals with enhancing natural-spawning populations in the upper Clackamas River. No hatchery augmentation was mentioned in the project files, except for the possible "seeding of beaver ponds" for two to three years after rehabilitation to establish coho salmon that would home into the ponds. Seeding was accomplished by capturing fish from Fish Creek in 1983. 1/ Agreement was reached with ODFW to plant 12,000 swim-up coho fry in a rehabilitated beaver pond. 3/

vii. Ocean and river harvest management considerations.

No ocean or harvest management considerations were available.

viii. Status of diversion screening and requirements for improvement.

Not applicable.

ix. Effects of project on resident fish stocks.

No information on the effects of habitat improvement on resident populations was available.

x. Analysis of all factors limiting existing and potential production.

Collawash Falls presents and impassible barrier to the upstream migration of most anadromous fish returning to the upper Clackamas River. Improvements of passage above Collawash Falls would make 10 miles of spawning and rearing habitat available to anadromous fish species. Above the falls, three smaller falls block entry to an additional 8.5 miles of stream habitat. 2/

Runs of spring chinook salmon, coho salmon, and winter and summer steelhead trout return to the Collawash River below the falls. Currently, only 10-20 percent of the summer steelhead run successfully pass Collawash Falls. 2/

In Fish Creek, lack of suitable spawning and rearing habitat limit chinook and coho salmon production, and lack of suitable spawning habitat limit steelhead in lower Wash Creek. Smolt habitat capability

for coho salmon is limited to about 20 percent of the estimated potential in lower Fish Creek. Steelhead production is limited to 20-30 percent of potential in lower Wash Creek, a tributary to Fish Creek, by lack of suitable spawning habitat. 1/

The habitat in Fish Creek is characterized into five types: riffles (80 percent), pools ((10 percent). side channels (9 percent), alcoves (1 percent), and beaver pond6 (0.3 percent). The pool/riffle ratio is 1:14. The addition of boulder berms in Fish Creek will increase pool habitat by 29 percent. These pools will eventually fill in with gravel and be used by chinook salmon as spawning and rearing habitat. The addition of boulder berms in lower Wash Creek would create spawning habitat for steelhead. The creation or improvement of "beaver pond" habitat would increase rearing habitat for coho salmon and over-wintering habitat for all species. Felling large tree6 into Fish Creek will create more alcove habitat for coho salmon. As part of the stream enhancement program on Fish Creek, riparian vegetation will be planted to provide more stream shading and lower water temperatures in the summer. 1/

Four tribuaties of Fish Creek have impaired passage. Passage improvements to these tributaries is scheduled for FY 85 through FY 87 and will access 4 miles of habitat. 4/

xi. Emphasis on protection, mitigation and enhancement of upriver stocks of anadromous fish.

The intent of these projects is to improve natural spawning and rearing habitat availability for anadromous fish stock6 occurring in the Wilamette/Clackamas River system.

xii. The extent of coordinated tributary subbasin planning for habitat management, improvement and passage restoration.

These projects are a cooperative effort with the U.S. Forest Service. The projects were coordinated with the Oregon Department of Fish and Wildlife (ODFW), and reviewed by the Confederated Tribes of the Warm Springs. 5/

xiii. Plans for protection of the enhancement investment from land use and other activities in the tributary subbasin.

The watershed for the upper Clackamas River lies within the boundaries of the Mt. Hood National Forest. 1/

xiv. A means to evaluate the effectiveness of the projects.

Evaluation of habitat improvement methods is to be made each year for the duration of the proposed 5-year project. Future strategies on habitat improvements are contingent upon success of past improvements, measured by benefit/cost ratio analysis. 1/,4/

B. Cost estimates (estimates are based on the dollar amount submitted in original contract work statement).

Project 83-385 Fish Creek/Wash Creek
FY 83 $78,600

Project 84-11 (in part) Collawash Falls
FY 84 $37,808 Feasibility Study
FY 85 $65,000 Implementation

Fish Creek
FY 84 $ 80,907 Design, Implementation, Evaluation
FY 85 $104,000 Design, Implementation, Evaluation

Project 84-26 Little Falls Creek Passage
FY 85 $165,675

C. Time schedules.

Project 83-385 Fish Creek
Sept. 1984 Final Report of 82-83 Habitat Improvements

Project 84-11 (in part) Collawash Falls
Jan. 31, 1985 Draft Report for FY 84 work
Mar. 31, 1985 Annual Report
Jul. 31, 1985 Final Report- Feasibility Study of

Project 84-26 Little Falls Creek Passage
Project to begin in 1985

D. A description of coordination and consultation efforts, including:

i. History of cooperative efforts by fish and wildlife agencies, tribes, utilities, and private landowners regarding offsite enhancement in the tributary subbasin.

These projects have been coordinated with the ODFW. Projects are on U.S. Forest Service lands, and have been coordinated with other Forest Service programs involving watershed management.

ii. Information on whether the fish and wildlife agencies, tribes, and land management agencies concur in the annual work plan.

These programs have been reviewed by the Confederated Tribes of the Warm Springs.

REFERENCES

1. Natural Propagation and Habitat Improvement. Volume 1 – Oregon. Supplement A: Evaluation of Fisheries Enhancement Projects on Fish Creek and Wash Creek.

2. Contract 84-11. 1 Apr 1984. Description of Project II – Collawash River Falls, pages 5-6 of Attachment 2.

3. Progress Report, Quarterly, (6/l-9/30/84). Clackamas/Hood River Habitat Enhancement Project. Dave Simon.

4. Contract 84-11. 1 Apr 1984. Description of Project III – Fish Creek/Wash Creek Habitat Improvement, pages 6-11 of Attachment 2.

5. Contract 84-11. 1 Apr 1984. Work Statement. Page 1 of Attachment 2.

OROFINO CREEK PASSAGE RESTORATION

[redacted]

Nez Perce

FISHERIES RESOURCE MANAGEMENT

[redacted] (208) 843-2253

December 27, 1984

Larry Everson
Bonneville Power Administration
Division of Fish and Wildlife
P. 0. Box 3621
Routing PJS
Portland, OR 97232

Dear Larry:

I've outlined what we discussed on the phone as best I could, given the short deadline, December 31. I have included those sections from the Idaho Fish and Game Anadromous Fish Plan and the Bureau of Reclamation Report as attachments. Please let me know if I can be of any further help.

Sincerely,

Ray, ! N. Jones
Fishery Biologist

Enc

RNJ:jg

OROFINO CREEK PASSAGE RESTORATION

Introduction

Orofino Creek is about 62 miles long and enters the Clearwater River near river-mile 45. Orofino Falls, at stream mile 5.5 completely blocks upstream movement of salmon and steelhead. Approximately 130 miles of stream totaling 240 acres of habitat could be opened to salmon and steelhead production if passage facilities were provided at Orofino Falls.

A comprehensive survey of the enhancement potential, various enhancement alternatives, and development of cost benefit ratios was developed by the Bureau of Reclamation for Orofino Creek (see Attachment A). Orofino Creek has been identified by the State of Idaho as a priority in Clearwater River drainage and is described in the Anadromous Fish Plan of Idaho Fish and Game (see Attachment B). In addition, Orofino Creek has been accepted by the Power Planning Council for inclusion into their Fish and Wildlife Program (Section 704(d)(l)-Table 5: Adoptions 10/19/84).

Approach and Cost Estimates

The Bureau of Reclamation has recently finished a relatively complete and accurate evaluation of Orofino Creek for enhancement potential (see Attachment A). Since most of the necessary preliminary information has been compiled, project activities would involve two basic phases.

1. Phase I - Preliminary evaluation, design, and alternative selection.
   a. Additional information necessary would be identified and compiled. Preparations would be made for the implementation of Phase Ib.
   b. On-site inspection by engineers, identification of reasonable alternatives for providing passage, preliminary design of each alternative, including cost estimates and time schedules for implementation.
   c. Selection of most reasonable and desirable alternative.

2. Phase II - Implementation of selected alternative.

COST ESTIMATES: Phase 1 - a. 15,000 to 20,000
b. 125,000 to 175,000
c. 0

Phase II - Indeterminate. Dependent on Phase I.

Time Schedules

For Phase I, consideration will have to be given for the necessity of on-site inspections and evaluations during steelhead migration periods (February to May) and spring chinook salmon migration periods (May to July). Additional time will be necessary for preliminary designs to be put together and for alternative selection. Allowances will have to be made for NEPA processes before implementation. Finally, actual construction will depend upon the alternative selected.

Coordination

The project has been identified by the Bureau of Reclamation, Idaho Fish and Game, and the Nez Perce Tribe as an excellent opportunity for anadromous salmonid enhancement. Coordination between the tribes and agencies was conducted during the Fish and Wildlife Program Amendment6 process of the Power Planning Council. Agreement of all parties culminated in acceptance of the Amendment into the Program (see Attachment C).

OROFINO CREEK PASSAGE RESTORATION

ATTACHMENT A

Minor, short-term adverse conditions could be expected to reduce local air quality and water quality during the construction phase. Increased pollution from vehicle emissions and dust would be associated with construction activities, and increased turbidity below the damsite would be intermittent during construction. With construction completed, water quality below the dam would improve from present conditions by increasing streamflow during the summer months and lowering water temperatures. Immediately below the damsite, sedimentation and turbidity would 'be reduced.

Evaluations of cultural resources that might be affected by reservoir construction or the potential for increased recreation opportunities were not performed.

Orofino Creek

Orofino Creek is about 62 miles long and enters the Clearwater River near river-mile 45 (see Orofino Creek Basin map). Rising in the Sheep Mountain Range, Orofino Creek flows westerly through lands used for timber harvest, farming, livestock grazing, and mining. Land in the watershed is owned by the Federal Government (Clearwater National Forest), the State of Idaho, timber companies, and individuals. The lowermost 3 miles of Orofino Creek are within the boundaries of the Nez Perce Indian Reservation. The city of Orofino (population 3,700), located at the mouth of the creek, is the largest community in about a 40-mile radius. The smaller community of Pierce, Idaho, is located beside the creek upstream.

Need for Action

Orofino Falls near river-mile 5.5 completely blocks upstream movement of salmon and steelhead. The falls drops about 80 feet over a distance of about 530 feet (see photo).

Below the falls, Orofino Creek is used by steelhead, but low summer and fall streamflows may reduce the value of the habitat. These conditions also prevent salmon use of the lower portion of Orofino Creek. During the summer of 1982, the only year for which gaging records are available, flows near the mouth of Orofino Creek averaged 45.5 ft /s in August and 42.5 ft /s in September. During a low flow year (1982 is considered an average flow year), instream flows in Orofino Creek would be significantly less than those recorded.

Resource Potential

If fish passage facilities were provided at Orofino Falls, approximately 130 miles of stream totaling about 240 acres of stream habitat could be opened to steelhead spawning and rearing.-/ The quality of the habitat suggests that the stream would be unusually productive for anadromous salmonids.

1/ *Anadromous Fish Production Potential in Orofino Creek, Fisheries Assistance Office, U.S. Fish and Wildlife Service, Dworshak National Fish Hatchery, Ahsahka, Idaho, January 1983*

Above Pierce, Idaho, an estimated 145,000 square yards of spawning beds are available, enough to accommodate about 9,700 pairs of spawning steelhead. However, for purposes of this study, a more conservative estimate of steelhead production was used. Averages of three production estimate methods revealed that, after a 5-year buildup period, the average production of steelhead in Orofino Creek above the falls would be 72,000 smolts, or about 1,200 returning adult spawners. Commercial and sport fisheries could be expected to harvest an additional 2,400 adult steelhead.

Future Without a Project

The use of Orofino Creek above the falls is dependent upon the provision of fish passage facilities.

The presence of Orofino Falls provides an opportunity to generate hydropower using the natural head of the falls. This opportunity was not explored during this appraisal study because the city of Orofino has contracted with Orofino Falls Hydro Limited Partnership to investigate the potential for power generation at the site. They have been granted a permit to study the construction and operation of a powerplant by the Federal Energy Regulatory Commission. At this time, it is not known if the powerplant will be constructed.

For purposes of this study, future scenarios both with and without the powerplant were considered in the development of alternative plans to open habitat above the falls for steelhead production. Although powerplant operation schedules are not available, it was assumed that flows would be adequate for downstream passage of juvenile migrants with or without the powerplant.

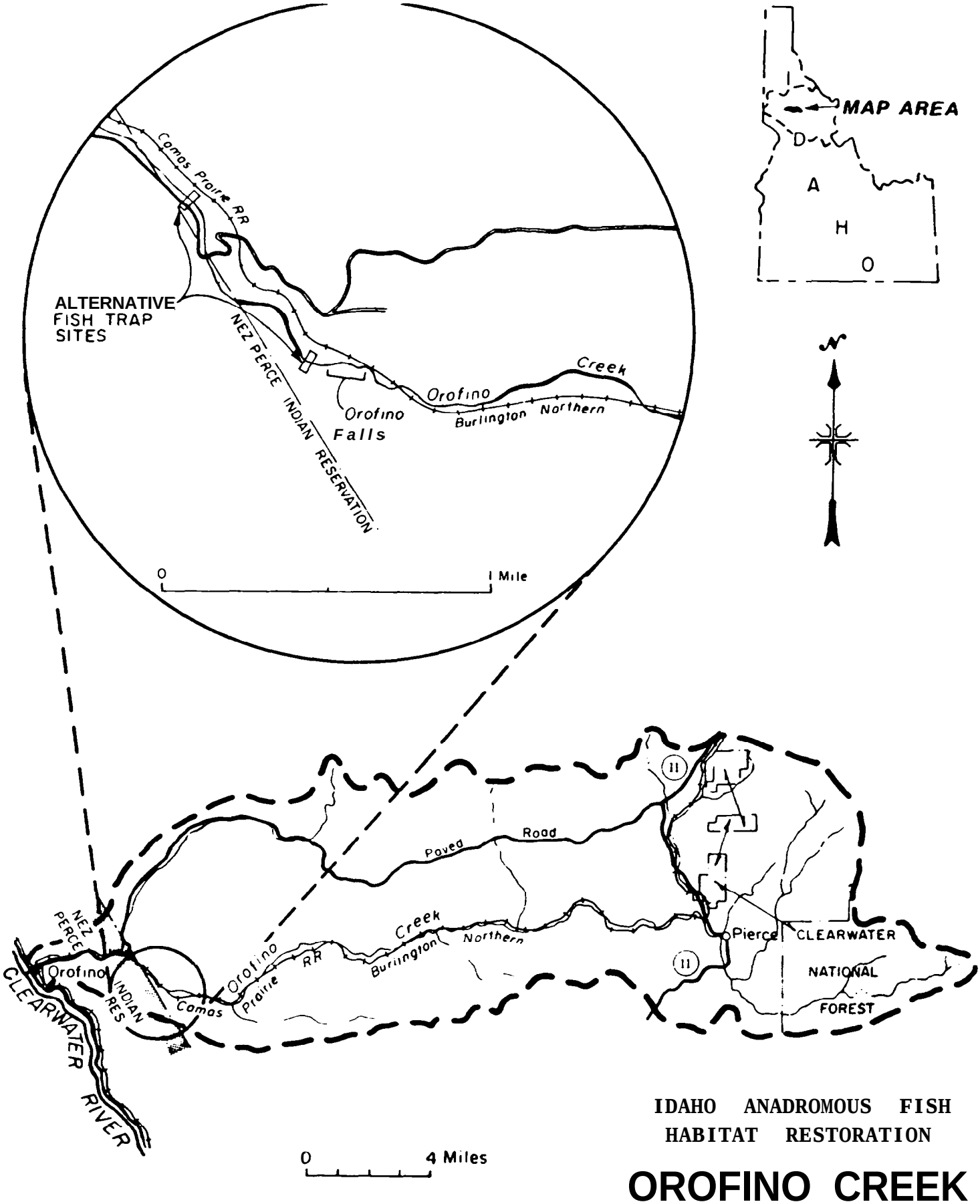
Alternative Plans Considered

Two alternative plans were considered to provide access for steelhead to spawning and rearing habitat above Orofino Falls. One plan calls for construction of a fish ladder; the other foresees development of trap and haul facilities.

Alternative A, Denil Fish Ladder.--A fish ladder could be installed to allow fish passage to habitat above Orofino Falls. Resting pools would be excavated out of the rock above each section of ladder and sealed with concrete. The total length of the ladder would be about 553 feet including 46 feet of ladder sections and nine pools. A false weir would be placed at the top, and water flowing through the ladder would provide the necessary attraction flows,

Denil fishways have been known to have problems related to bedload movement and icing. These issues would need to be closely examined if a more detailed study of fish ladder passage is conducted for Orofino Falls.

Alternative B, Trap and Haul Facility.--A trap and haul operation would require the construction of a trapplng and holding facility below Orofino Falls. Adult fish would be captured in the facility, trucked to a site above the falls, and then released to continue their upstream migration.



IDAHO ANADROMOUS FISH HABITAT RESTORATION

OROFINO CREEK BASIN

BUREAU OF RECLAMATION

NOVEMBER 1983 1423-100-5

The trapping facilities include a barrier dam, two holding tanks, and a building to enclose the tanks. The barrier dam crossing Orofino Creek would be placed at an angle and designed to encourage upstream migrants to swim toward attraction flows coming from the holding facilities. Fish would be transferred from the tanks to a truck and hauled to the top of the falls for release into Orofino Creek.

Location of the barrier dam and holding tanks cannot be determined until plans for a potential Orofino Falls powerplant are finalized. If a powerplant is constructed, the fish trapping facilities would be located adjacent to it, taking advantage of the powerplant's attraction flows. Since roads would be required above and below the falls for powerplant construction and operation, fish tank trucks could use this new access to the creek, thus eliminating the cost of constructing roads for hauling fish.

Without a powerplant, the trapping and holding facilities would be placed at the base of the falls, and road construction would be required both to the facility and to provide access to the creek above the falls.

Fish tank trucks serving other trap and haul or hatchery operations are already available in the area, and purchase of a new vehicle would not be required.

Evaluation of Alternatives

Both of the alternatives explored at this preliminary level of study would open spawning and rearing habitat above Orofino Falls for steelhead production. For caparative purposes, each alternative was evaluated for economic and enviromrental effects. .

Economic Impacts.- Costs and benefits associated with Alternatives A and B are shown in table 14. It was assuned that each alternative would provide the same number of returning steelhead spawners--1,200 fish--and that a S-year buildup period would be required to reach maximun production. Each alternative would have a 100-year project life. Since either project could be constructed in one season, interest during construction was not considered a project cost.

Table 14. --Comparative Economic Evaluation, Alternatives A and B. Orofino Creek Basin

Item	Value	
	Alternative A-- Fish Ladder	Alternative B-- Trap and Haul
Costs[1/]		
Total construction	$285,000	$106,000
Annual equivalent construction	22,500	8,400
Annual operation, maintenance, and replacement	2,800	9,400
Total annual equivalent costs	$ 25,300	$ 17,800
Benefits[2/]		
Anadromous fish annual equivalent	$223,000	$223,000
Benefit-cost ratio	8.81 to 1.00	12.53 to 1.00

1/ Coats are based upon a 100-year project life, a 7-7/8 percent discount rate, and a January 1983 price level.

2/ Anadromous fish benefits are based upon 1,200 returning steelhead spawners after a 5-year buildup period.

Environmental Quality.--Both alternatives would accomplish the same goals and have nearly identical environmental impacts. For both, construction activities would cause very minor short-term impacts on local air quality from construction equipment exhaust and dust. There would also be short-term increases in water turbidity in Orofino Creek during the construction phase.

Small areas of streamside vegetation would be removed during construction of the trapping facilities, and further impacts could occur if road construction is needed. However, these potential impacts are relatively insignificant.

Impacts to anadromous fish are the most significant anticipated effect of the project. An estimated 1,200 returning adult steelhead spawners would be introduced to habitat that previously was unavailable for use.

There would be little or no impact to wildlife from either alternative.

Cultural resources were not evaluated at this stage of the investigation. If further studies are done, cultural resources would be evaluated.

Other Social Effects

Slight increases in basinwide steelhead catch ratios could be attributed to opening Orofino Creek to steelhead spawning and rearing. Adult steelhead passing through the Nez Perce Reservation would provide positive benefits to the tribe, and if a fish ladder is installed, general recreationists would be afforded the opprtunity to observe upstream migration.

OROFINO CREEK PASSAGE RESTORATION

ATTACHMENT B

Sub-basin 3 - Clearwater River and Tributaries, Orofino Bridge To South Fork

	Steelhead	Spring Chinook
Production Objectives		
Hatchery	0	800
Natural	2,250	1,500
Total	2,250	2,300
Spawning Escapement Objectives		
Hatchery	0	0
Natural	900	600
Total	900	600
Hatchery Smolt Release Obj.	0	100,000

This portion of the main river has a limited amount of rearing for salmon and steelhead. It is very important as migratory habitat for salmon and steelhead and as an overwintering area for steelhead adults. This area of the main river is not important as a spawning habitat.

Tributary streams in this sub-basin are degraded by logging activities and clearing of headwater areas for grain farming. Orofino Creek has a migration barrier approximately 3 miles upstream from its mouth. Orofino Creek has extensive areas of spawning and rearing habitat that could be

placed into production by installation of passage facilities at this migration barrier. Lolo Creek has a large potential for natural production of salmon and steelhead. Forestry management practices must be conducted in a manner that will allow the recovery of the stream habitats in this sub-basin, particularly Lolo Creek.

Lawyers Canyon Creek has some habitat that is still producing steelhead, but the low summer flows and high stream temperatures in the summer prevent the stream from being an important natural production stream. Upstream storage of the high spring flows and summer releases could improve the natural production of this stream and could improve its utility as a location for outplanting hatchery-produced steelhead and salmon smolts.

Management Actions:

1. Investigate feasibility of providing fish passage at Orofino Creek Fal

2. Improve forestry management practices to allow recovery of stream habitats.

3. Investigate feasibility of storage reservoir in Lawyers Canyon Creek for improvement of summer flows.

4. Acquire and develop additional fishing access areas.

OROFINO CREEK PASSAGE RESTORATION

ATTACHMENT C

IDAHO DEPARTMENT OF FISH AND GAME
600 South Walnut • Box 25
Boise • Idaho • 83707

October 31, 1983

Ner Perce Tribal Executive Council
Allen Pinkham, Chairman
P.O. Dox 305
Lapwai, ID 83540

Dear Sirs:

Idaho Fish and Game Department, Bureau of Fisheries, has reviewed the following amendments to the PNPPC Fish and Wildlife Program.

1. Big Canyon Creek habitat improvement,

2. Orofino Creek fish passage,

3. Mainstem Clearwater River - evaluation of habitat and production potential, and

4. Dworshak Reservoir - resident fish enhancement.

The Department supports the Nez Perce Tribe in submitting these amendments.

Sincerely,

Jerry M. Conley
Director

RECEIVED NOV 4 1983

SALMON FALLS (LITTLE NACHES RIVER, NACHES RIVER, YAKIMA RIVER) FISHWAY CONSTRUCTION PROJECT

A Report to be Used in the Development
of New Starts by BPA and the Northwest Power Planning Council

Construction Start Date Proposed: July 15, 1985

Submitted by the U.S.D.A. Forest Service

Written By: _____ Date Dec. 21, 1984
STEVEN KESSLER
Fisheries Biologist

Recommended By: _____ Date 12-24-84
DONALD F. [illegible]
District Ranger

Approved By: _____ Date 1/2/85
DONALD H. SMITH
Forest Supervisor

SALMON FALLS FISHWAY CONSTRUCTION PROJECT

A comprehensive report entitled "Supplemental Data, Information and Biological Justification in Support of Amendment (US/704 (e)(l)-5) --- Construction of an Adult Fish Passage Facility at Salmon Falls, Little Naches River (Yakima River Basin) and Amendment (US/704(d)(1)-15) --- Little Naches River Channel Rehabilitation" by John Easterbrooks (Washington Department of Fisheries) and Steven Kessler (Forest Service) was submitted to the Northwest Power Planning Council (NWPPC) in July, 1984 for consideration in their acceptance of the amendment for this project in their Fish and Wildlife Program. A copy of this report is appended. From this document comes the majority of the information used in writing the evaluation criteria included here.

Following is a discussion, item by item, of the evaluation criteria:

A. AN EXPLANATION OF THE SOUND BIOLOGICAL BASIS FOR PROJECT SELECTION

In narrative form the appended document describes the best biological basis for construction of this project. There have been a few changes made since July due to new information gathered. In particular, summer low flows were considerably lower than expected and has resulted in some changes in the expected habitat available for spawning and rearing of anadromous fish.

A1. Existing Smolt Production, Existing Potential for Smolt Production and Potential with Habitat or Passage Improvement

At present there are no anadromous fish known to migrate over the Falls. However, at high spring flow conditions, it is quite possible that some steelhead may negotiate the Falls.

With construction of fish passage, the expected benefits are as found in Table 1. Note that there are a few changes in both miles of accessible habitat and total production from the earlier report (Appendix).

A2. Existing Escapement and Potential Escapement

At present there is no escapement beyond the Falls area. However, based on redd counts, there was an estimated escapement of 97 spring chinook below the Falls in the lower Little Naches River in 1984 and an average of 49 during the last three years. These numbers are based on an estimated 2.44 fish spawning per redd (Upper Yakima River average for 1982, 1983, 1984).

With enhancement, based on calculations from best available data, estimated potential escapement is approximately 300 spring chinook, 350 coho and 100 steelhead (see Table 1). Intuitively, the Forest Service and fishery agency biologists suspect that the number for coho is an overestimate and the number for steelhead is an underestimate.

A3. Existing Wild and Naturally Spawning Stock Trends and Conditions

There is no existing anadromous fish production in the reaches under consld-eration. However, there are trends in the Naches and Little Naches which show long term decreases with a significant turnaround and increase in 1984. Habitat improvement plans for the Yakima River Basin by the NWPPC, primarily consisting of improving upstream passage and reducing entrapment in irrigation diversions combined with water planning of the Yakima River Basin Water Enhancement Project

Table 1. Linear miles of potential rearing habitat, ● versge stream widths, rearing habitat ● ❐ℳℳ smolt production potential and potential adult escapement for the Little Naches River system upstream of Salmon Palls (R.M. 4.4) by reach and species.

Species	Stream Reach	Miles (feet)	Ave. Width in Ft.	Sq.Ft.	Yds	Smolt Production Est.	Potential Adult Escap
	Mainstem L.Naches to jct. of Middle and North Fork	11.9 (62,832)	30	1,884,960	209,440	25,133	
Spring Chinook Salmon	Blowout Ck.	0.5 (2,640)	8	21,120	2,341	282	
	South Fork L.Naches	0.75 (3,960)	20	79,200	8,800	1,056	
	Bear Creek	0.125 (660)	8	5,280	587	70	
	Mainstem side channels and braids	4.0 (21,120)	10	211,200	23,467	2,816	29,357 x .01
	Totals	17.3 (91,212)		2,201,760	244,641	29,357	293
	Mainstem L. Naches and North Fork to Pyramid Ck.	12.3 (64,944)	30	1,948,320	216,480	27,060	
Coho salmon	Blowout Ck.	1.0 (5,280)	8	42,240	4,693	985	
	South Fork L.Naches	1.0 (5,280)	20	105,600	11,733	2,200	
	Bear Creek	0.125 (660)	8	5,280	587	123	
	Mainstem braids and side channels	4.1 (21,648)	10	216,480	24,053	5,051	35,419 x.01
	Totals	18.5 (97,680)		2,317,920	257,546	35,419	354
	Mainstem L. Naches and North Fork	15.4 (81,312)	30	2,439,360	217,040	5,428	
Steelhead Trout	Blovout Ck.	1.0 (5,280)	8	42,240	4,693	94	
	South Fork L.Naches	1.25 (6,600)	20	132,000	14,667	294	
	Bear Creek	0.125 (660)	8	5,280	587	12	
	Pyramid Ck.	0.25 (1,320)	6	7,920	880	18	
	Middle Fork L. Naches	0.5 (2,640)	12	31,680	3,520	70	
	Mainstem braids and side channels	5.1 (26,928)	10	269,280	29,920	599	6,515 x .015
	Totals	23.6 (124,740)		2,927,760	325,307	6,515	98

(YRBWEP), should lead to dramatic increases in numbers of fish produced in the Yakim Basin by the early 1990's.

A4. Benefits to Multiple Anadromous Species and Runs

Benefits to all anadromous species have been covered above and in Table 1.

A5. Extent and Conditions of Habitat Available Through Passage Restoration

Table 1 and the discussions in A1 and A2 a&applicable to this section.

A6. Requirements for Hatchery Supplementation, Including Genetic and Disease Considerations

To reach the potential production listed in Table 1 hatchery supplementation will be needed for all species. Species, stocking levels, genetic and disease considerations are still to be established by the Forest Service (USDA), Washington Departments of Game (WDG) and Fisheries (WDF), the Fish and Wildlife Service (USFWS), Yakima Indian Nation (YIN), and the Northwest Chapter of the Salmon and Steelhead Council and Trout Unlimited (NWCSSC & TU). In an early meeting considering this project, the groups tentatively planned on stocking chinook and steelhead during the first few years. In the future coho would be considered for stocking also. The first steelhead plants of approximately 8000 fish at 30 fish per pound were made in 1984 above the Falls.

A7. Ocean and River Harvest Management Considerations

Ocean and river harvest management considerations are mostly outside the scope that can be addressed by this proposal. However, two factors may be of particular relevance: 1) passage of a Canadian - USA fishing treaty should increase escapements of up-river stocks, particularly the chinook. 2) As fish runs increase, an increased percentage of the run can be expected to be harvested by treaty Indian tribes for subsistence and ceremonial purposes.

A8. Status of Diversion Screening and Requirements for Improvement

Major fish screens at diversions downstream of the Little Naches are being rehabilitated to "state of the art" to increase their efficiency of operation. Within five years all major projects in the Yakima Basin should be completed.

A9. Effects of Project on Resident Fish Stocks

Since the area accessed by the Falls is now entirely a resident fishery, it can be expected that there will be competition between the anadromous and resident fish. However, the majority of spring chinook are expected to rear in the larger systems downstream and therefore their competition may be minor. The most competition, as yet unquantifiable because of a lack of data, is expected between the anadromous (steelhead) and resident rainbow trout. Sport fishing regulations may need to be adjusted due to potentially high anadromous fish catch in the resident fishery.

A10. Analysis of all Factors Limiting Existing and Potential Production

There are two seasonal effects which likely have the greatest limiting affects on production in the Little Naches: summer low flows and winter freshets.

Summer low flows define the range of spawning but not necessarily rearing. Winter freshets, normally caused by warm winds with rain on snow, scour stre channels and occasionally change the entire Integrity of the stream. Fish a probably often entrapped in these events. The barren reach proposed for rev tation rehabilitation (see Appendix) below Salmon Falls was caused by such a winter freshet and resulted in the deposition of massive amounts of rock deb Note that this reach of stream needs to be rehabilitated In conjunction with this project for maximum effectiveness.

All. Emphasis on Protection, Mitigation and Enhancement of Upriver Stocks of Anadromous Fish

This item relates to Item A7. Also note that the Yakima system is being use the "showcase" by the NWPPC in its Fish and Wildlife Program to show the ber fits of offsite mitigation (see chapter 900 of the Program). Therefore ther tremendous emphasis on the protection, mitigation and enhancement of the Yak River anadromous fish.

A12. The Extent of Coordinated Tributary Subbasin Planning for Habitat Management Improvement and Passage Restoration

See Items A6 and All. All the agencies listed, plus the Bureau of Reclamat: the Bonneville Power Authority, the Soil Conservation Service, Washington Department of Ecology and many irrigation districts, have been actively fnv in basin planning.

A13. Plans for Protection of the Enhancement Investment from Land Use and Other Activities in the Tributary Subbasin

Streams in forest lands managed by the Forest Service are expected to be pr tected by present management and implementation of the Wenatchee National Forest's Forest Plan. The North Fork of the Little Naches, in which Plum C Timber Company owns every other section of land, may see significant harves (primarily clearcutting) in the next few years. No regulations which wold restrict their harvest rate exist for private lands.

A14. A Means to Evaluate the Effectiveness of the Projects

Redd counts on portions of, or entire, streams will be initialized when the first returning fish would be expected. These counts will be integrated wi the existing program in the entire Yakima Basin conducted by the U.S. Fish Wildlife Service.

B. COST ESTIMATES

Cost estimates and a statement on cost sharing were Included in the documen found In the appendix. It is assumed that the final design will be simila the conceptual plan: an embedded vertical slot fishway using mostly exist rock vith removable concrete slab covers. Note that exact cost of material labor cannot be known until final design and the environmental assessment complete.

The revised projected responsibility and breakdown on costs for portions of the project are as follows. The 44 percent contingency factor (referred to in the Appendix) is included in these estimates.

ITEM	ORGANIZATION	DTRECT BPA COSTS
Pre-project Adm. Planning	All	
Stream Surveys*	WDF, USFS, USFWS, WDG	
Fish Stocking	USFWS, NWCSSC&TU, YIN	
Site Survey*	USFS, WDF	
Stream Gaging	USFS	
Conceptual Design & Layout	WDF, USFS	
Processing of Permits	WDF, USFS, YIN	
Environmental Assessment	USFS, YIN	
Final Design, Specs., Plans	BPA**	$ 21,200
Labor & Materials	BPA***	$265,000
Construction Administration (legal,inspections,etc)	BPA**	$ 26,500
Monitoring (years subsequent to completion)	USFWS	
Maintenance (years subsequent to completion)	USFW,NWCSSC&TU	$ 5,000/year

*Complete

**The project responsibilities for these may be assumed by either: 1) BPA and a design/engineering contractor or 2) the Forest Service. Either way it is now anticipated that funding will need to come from BPA.

***Labor may be funded through the State of Washington's JFA (Jobs for America) Program. However funding in the State's new biennium is not assured. Also the expertise of workers hireable under JFA may not be sufficient for construction of this technical project. Therefore funding for the entire amount is being requested.

C. TIME SCHEDULES

Construction is anticipated in mid July through September of 1985 when flows the Little Naches are at their lowest.

Key dates proposed are as follows:

Appropriation of Funds and Labor Assured (BPA, WDF)	3/01/85
Environmental Assessment Completed	3/15/85
Project Design Completed	5/15/85
Processing of Permits Completed	6/10/85
Labor Crews Obtained	6/15/85
Materials Purchased	7/01/85
Anticipated Start Date	7/15/85
Anticipated Completion Date	9/01/85

D. A DESCRIPTION OF COORDINATION AND CONSULTATION EFFORTS

Parts A, B, and C above show that many agencies and organizations have been involved in the project planning. This project is truly a cooperative effor between many groups. All have agreed that the project should be implemented rapidly as possible. And, as soon as finding is assured, there will be furt coordination meetings to assure that method of project implementation, inclu stocking guidelines, are agreeable to all parties.

Note that one item mentioned in the amendment application has not been addressed. That is the possibility of the construction of Horsetail Reservoir the Little Naches as part of the Yakima River Basin Water Enhancement Project (YRBWEP) selected alternative. The dam would effectively block all upstream of the Little Naches River by anadromous fish. The agencies consider select of Horsetail unlikely enough to warrant construction of the fishway.

LITTLE NACHES RIVER CHANNEL REHABILITATION PROJECT (NACHES RIVER, YAKIMA RIVER)

A Report to be Used in the Development
of New Starts by BPA and the Northwest Power Planning Council

Submitted by the U.S.D.A. Forest Service

Written By: _____ Date Dec. 21, 1984
STEVEN KESSLER
Fisheries Biologist

Recommended By: _____ Date 12-24-84
DONALD F. ROTELL
District Ranger

Approved By: _____ Date 12/85
DONALD H. SMYTH
Forest Supervisor

LITTLE NACHES RIVER CHANNEL REHABILITATION PROJECT

A comprehensive report entitled "Supplemental Data, Information and Biological Justification in Support of Amendment (US/704 (e)(l)-5) --- Construction of an Adult Fish Passage Facility at Salmon Falls, Little Naches River (Yakima River Basin) and Amendment (US/704(d)(1)-15) --- Little Naches River Channel Rehabilitation" by John Easterbrooks (Washington Department of Fisheries) and Steven Kessler (Forest Service) was submitted to the Northwest Power Planning Council (NWPPC) in July, 1984 for consideration in their acceptance of the amendment for this project in their Fish and Wildlife Program. A copy of this report is appended. From this document comes the majority of the information used in writing the evaluation criteria included here.

Following is a discussion, item by item, of the evaluation criteria:

A. AN EXPLANATION OF THE SOUND BIOLOGICAL BASIS FOR PROJECT SELECTION

The reach included in this project is within the lower four to five miles of the Little Naches River which has been heavily impacted by roads and the effects of two major floods in the last ten years. A large amount of bedload deposited in this reach, eliminating fish passage most of the year and all habitat. A flood rehabilitation project removed the bedload but left a barren site. No chinook salmon or steelhead have been observed to utilize this reach. Also, no chinook are known to travel through the area, although there are no physical migration barriers.

This project would rehabilitate this section of stream as travel water, rearing and probably spawning area and will be necessary to maximize the benefit of the proposed laddering of Salmon Falls, just upstream.

A1. Existing Smolt Production, Existing Potential for Smolt Production and Potential with Habitat or Passage Improvement

At present there are no anadromous fish known to utilize this section. Hovever, at high spring flov conditions, it is quite possible that some steelhead negotiate the reach and utilize the habitat above the Falls. In most years spring chinook spavn immediately below this reach.

With rehabilitatoin for fish passage, the expected benefits (as travel waters) are those made available upstream of the reach and Salmon Falls (Table 1). This is the same table of benefits as for the Salmon Falls project. The additional habitat made available within the reach is not of primary concern and has not been evaluated.

A2. Existing Escapement and Potential Escapement

At present there is no anadromous escapement knovn in or beyond the reach. However, based on redd counts, there was an estimated escapement of 97 spring chinook immediately below the reach in the lower Little Naches River in 1984 and an average of 49 during the last three years. These numbers are based on an estimated 2.44 fish spawning per redd (Upper Yakima River average for 1982, 1983, 1984; Malm, personal communication).

With enhancement. based on calculations from best available data, estimated potential escapement is approximately 300 spring chinook, 350 coho and 100 steelhead (see Table 1). Intuitively, the Forest Service and fishery agency

Table 1. Linear riles of potential rearing habitat, average stream widths, rearing habitat area, smolt production potential and potential adult escapement for the Little Naches River system upstream of Salmon Falls (R.M. 4.4) by reach and ● pecles.

Species	Stream Reach	Miles (feet)	Ave. Width in Ft.	Sq.Ft.	Yds	Smolt Production Est.	Potential Adult Escape
	Mainstem L.Naches to jct. of Middle and North Fork	11.9 (62.832)	30	1.884,960	209,440	25.133	
Spring Chinook Salmon	Blovout Ck.	0.5 (2,640)	A	21,120	2,347	282	
	South Fork L.Naches	0.75 (3,960)	20	79,200	8,800	1,056	
	Bear Creek	0.125 (660)	8	5,280	587	70	
	Mainstem side channels and braids	4.0 (21,120)	10	211,200	23,467	2,816	29,357 x .01
	Totals	17.3 (91,212)		2,201,760	244,641	29,357	293
	Mainstem L. Naches and North Fork to Pyramid Ck.	12.3 (64,944)	30	1,948,320	216,480	27,060	
Coho Salmon	Blowout Ck.	1.0 (5.280)	8	42,240	4,693	985	
	South Pork L.Naches	1.0 (5,280)	20	105,600	11,733	2,200	
	Bear Creek	0.125 (660)	8	5,280	587	123	
	Mianstem braids and side channels	4.1 (21,648)	10	2,317,920	24,053	5,051	35,419 x .Ol
	Totals	16.5 (87,060)			257,546	35,419	354
	Mainstem L. Naches end North Fork	15.4 (81,312)	30	2.439.360	217,040	5,428	
Steelhead Trout	Blowout Ck.	1 .0 (5,280)	8	42,240	4,693	94	
	South Fork L.Naches	1.25 (6,600)	20	132,000	14,667	294	
	Beer Creek	0.125 (660)	8	5,280	587	12	
	Pyramid Ck.	0.25 (1,320)	6	7.920	880	18	
	Middle Fork L.Naches	0.5 (2,640)	12	31,680	3,520	70	
	Mainstem braids and side channels	5. 1 (26,928)	10	269,280	29,920	599	6,515 x .015
	Totals	23.6 (124,740)		2.927.760	325,307	6,515	98

biologists suspect that the number for coho is an overestimate and the number for steelhead is an underestimate.

A3. Existing Wild and Naturally Spawning Stock Trends and Conditions

There is no existing anadromous fish production known in the reach under consideration. However, there are trends in the Naches and Little Naches which show long term decreases with a significant turnaround and increase in 1984. Habitat Improvement plans for the Yakima River Basin by the NWPPC, primarily consisting of improving upstream passage and reducing entrapment in irrigation diversions combined with water planning of the Yakima River Basin Water Enhancement Project (YRBWEP), should lead to dramatic increases in numbers of fish produced in the Yakima Basin by the early 1990's.

A4. Benefits to Multiple Anadromous Species and Runs

Benefits to all anadromous species have been covered above and in Table 1.

A5. Extent and Conditions of Habitat Available Through Passage Restoration

Table 1 and the discussions in Al and A2 are applicable to this section.

A6. Requirements for Hatchery Supplementation, Including Genetic and Disease Consld-erations

To reach the potential production listed in Table 1 hatchery supplementation in the area above this reach and Salmon Falls will be needed for all species. Species, stocking levels, genetic and disease considerations are still to be established by the Forest Service (USDA), Washington Departments of Game (WDG) and Fisheries (WDF), the Fish and Wildlife Service (USFWS), Yakima Indian Nation (YIN), and the Northwest Chapter of the Salmon and Steelhead Council and Trout Unlimited (NWCSSC&TU). In an early meeting considering this project, the groups tentatively planned on stocking chinook and steelhead during the first few years. In the future coho would be considered for stocking also. The first steelhead plants of approximately 8000 fish at 30 fish per pound were made in 1984 above the Falls.

A7. Ocean and River Harvest Management Considerations

Ocean and river harvest management considerations are mostly outside the scope that can be addressed by this proposal. However, two factors may be of particular relevance: 1) passage of a Canadian - USA fishing treaty should increase escapements of up-river stocks, particularly the chinook 2) As fish runs increase, an increased percentage of the run can be expected to be harvested by treaty Indian tribes for subsistence and ceremonial purposes.

A8. Status of Diversion Screening and Requirements for Improvement

Major fish screens at diversions downstream of the Little Naches are being rehabilitated to "state of the art to increase their efficiency of operation. Within five years all major projects in the Yakima Basin should be completed.

A9. Effects of Project on Resident Fish Stocks

Since the area accessed by this reach and the Falls is now entirely a resident fishery, it can be expected that there will be competition between the anadromous and resident fish. However, the majority of spring chinook are

expected to rear in the larger systems downstream and therefore their competition may be minor. The most competition, as yet unquantifiable because of a lack of data, is expected between the anadromous (steelhead) and resident rainbow trout. Sport fishing regulations may need to be adjusted due to potentially high anadromous fish catch in the resident fishery.

A10. Analysis of all Factors Limiting Existing and Potential Production

There are two seasonal effects which likely have the greatest limiting affects on production in the Little Naches: summer low flows and winter freshets. Summer low flows define the range of spawning but not necessarily rearing. Winter freshets, normally caused by warm winds with rain on snow, scour stream channels and occasionally change the entire integrity of the stream. Fish are probably often entrapped in these events. This barren reach proposed for revegetation rehabilitation was caused by such a winter freshet and resulted in the deposition of massive amounts of rock debris. This might happen again in a future 50+ year flood event.

All. Emphasis on Protection, Mitigation and Enhancement of Upriver Stocks of Anadromous Fish

This item relates to Item A7. Also note that the Yakima system is being used as the "showcase" by the NWPPC in its Fish and Wildlife Program to show the benefits of offsite mitigation (see chapter 900 of the Program). Therefore there is tremendous emphasis on the protection, mitigation and enhancement of the Yakima River anadromous fish.

A12. The Extent of Coordinated Tributary Subbasin Planning for Habitat Management, Improvement and Passage Restoration

See Items A6 and All. All the agencies listed, plus the Bureau of Reclamation, the Bonneville Power Authority, the Soil Conservation Service, Washington Department of Ecology and many irrigation districts, have been actively involved in basin planning.

A13. Plans for Protection of the Enhancement Investment from Land Use and Other Activities in the Tributary Subbasin

Streams in forest lands managed by the Forest Service are expected to be protected by present management and implementation of the Wenatchee National Forest's Forest Plan. The North Fork of the Little Naches, in which Plum Creek Timber Company owns every other section of land, may see significant harvest (primarily clearcutting) in the next few years. No regulations which would restrict their harvest rate exist for private lands.

A14. A Means to Evaluate the Effectiveness of the Projects

Redd counts on portions of, or entire, streams will be initialized when the first returning fish would be expected. These counts will be integrated with the existing program in the entire Yakima Basin conducted by the U.S. Fish and Wildlife Service. The site will be monitored by fishery personnel on an opportunity basis for effectiveness of instream structures.

B. COST ESTIMATES

Cost estimates are essentially those found in the original amendment application, with one addition. It is expected that a hydraulic engineering consultant will be hired to advise in the design.

ITEM	ORGANIZATION	ITEMS COST SHARED*	DIRECT BPA COST
Pre Planning	All	X	
Hydraulic Consultant	USPS		$2,500
Design, Site Survey	USFS, NWCSSC&TU,WDF	X	$3,000
EA Writing	USFS		$1,000
Large rock placement or other structures	USFS,NWCSSC&TU	X	$4,000
Planting of riparian vegetation	USFS,NWCSSC&TU	X	$2,000
Watering systems	USFS, NWCSSC&TU	X	Initial $2,000
Water systems maintenance and other maintenance	NWCSSC&TU,USFS	X	3 years $1,000

*Cost sharing is primarily donated labor.

C. TIME SCHEDULES

All design, site survey and EA writing should be accomplished in FY 1985. Initial construction is planned for FY 1986.

Key completion dates proposed are as follows:

**Appropriation of Funds	5/01/85
**Site Survey	8/01/8S
**EnvIronrental Assessment	10/l/85
Permits Received	5/01/86
Anticipated Start Date	6/01/86
Anticipated Completion Date	9/15/86

**Portions need in FY 1985

D. A DESCRIPTION OF COORDINATION AND CONSULTATION EFFORTS

Parts A and B show that many agencies and organizations have been involved in the project planning. The Northwest Chapter of the Salmon and Steelhead Council and Trout Unlimited (NWCSSC&TU) and the Forest Service have chosen to lead in the planning and construction of this rehabilitation project. However, this project is a cooperative effort between many groups since it is tied directly to the construction of the fishway at Salmon Falls, All have agreed that the project should be implemented as rapidly as possible. And, as soon as funding is assured, there will be further coordination meetings to assure that method of project implementation is agreeable to all parties.

Note that one item mentioned in the amendment application has not been addressed. That is the possibility of the construction of Horsetail Reservoir on the Little Naches as part of the Yakima River Basin Water Enhancement Project's (YRBWEP) selected alternative. The dam would effectively block all upstream use of the Little Naches River by anadromous fish. The agencies consider selection of Horsetail unlikely enough to warrant construction of this project and the fishway.

APPENDIX

Supplemental Data, Information and Biological Justification in Support of Amendment (US/704(e)(1)-5) -- Construction of an Adult Fish Passage Facility at Salmon Falls, Little Naches River (Yakima River Basin) and Amendment (US/704(d)(1)-15)--- Little Naches River Channel Rehabilitation

Supplemental Data, Information and Biological Justification in Support of Amendment (US/704(e)(l)-5) --- Construction of an Adult Fish Passage Facility at Salmon Falls, Little Naches River (Yakima River Basin) and Amendment (US/704(d)(1)-15) --- Little Naches River Channel Rehabilitatoin

submitted by

John A. Easterbrooks, Fish Biologist
Washington Department of Fisheries

and

Steven Kessler, Fish Biologist
U.S.D.A. Forest Service

July 1984

SUMMARY OF REPORT AND KEY POINTS FOR TESTIMONY FOR NWPPC MEETING ON JULY 26, 1984 for:

US/704(e)(l)-5: Construction of an Adult Fish Passage Facility at Salmon Falls, Little Naches River (Yakima River Basin)

US/704(d)(1)-15: Little Naches River Channel Rehabilitation

1. This report and testimony is for both ammendments.

2. From Table 1:

	miles habitat newly available	sq. yards habitat	smolt prod.	adult estimate
spring chinook	17.9	252,853	30,343	300
coho	20.5	286,880	39,598	400
steelhead	23.6	325,307	6,515	

This is much greater than the five miles listed in the original application. These numbers are based on new stream surveys. Observors thought that the habitat was of exceptional quality.

3. Compensation for lost habitat:

Permanent habitat losses to anadromous fish in the Yakima Basin are at least 237 miles. Other habitat may never be restored (see Appendix A of report). These projects will recover some of the loss.

4. Project Costs:

More detailed cost analysis for the fishway project is $318,000, which includes a 44% contingency factor for unknown construction difficulties. For the stream rehabilitation project costs in the ammendment are still considered accurate.

5. Cost sharing and coordination:

W.D.F., U.S.F.S. and the Yakima Chapter of Northwest Salmon and Steelhead Council and Trout Unlimited have identified portions of the projects they can fund through existing workforce and monies. The objective is for these groups to construct the projects with material and some labor cost support from BPA funds. The Yakima Indian Tribe is also participating in some of the planning and design for the projects. All agencies, along with the W.D. Game, have agreed to cooperatively develop stocking plans.

6. Previous fisheries related expenditures:

The Forest Service in road reconstruction on the lower Little Naches spent ove $200,000 in costs directly allocated to protecting fish habitat in 1982-1984. Th included construction of three concrete retaining walls so as not to encroach on River and installation of a multi-plate open bottomed arched culvert.

Introduction

In October, 1983, the U.S. Forest Service (USFS) submitted two applications for amendment to the Northwest Power Planning Council's (PPC) Columbia River Basin Fish and Wildlife Program. Both amendment applications dealt with anadromous fish habitat enhancement on the Little Naches River within the Yakima River Basin. This report provides further information and data relative to application (US/704(e)(l)-5) which recommended construction of an adult fish passage facility at Salmon Falls, a natural barrier located on the Little Naches River at river mile (R.M.) 4.4. Application (US/704(d)(1)-15) recommended implementation of a 3,000 foot channel rehabilitation project in a flood damaged reach of the Little Naches River between the mouth of Crow Creek (R.M. 3.2) and Salmon Falls. These two proposals are mutually dependent on each other---- the success of an anadromous fish enhancement project in the "barren" habitat above Salmon Falls depends on construction of a passage facility at the falls and on providing an adequate transportation corridor through the reach downstream so that adult fish can access the fishway during low water conditions. Neither project can stand alone and the justification material provided in this report applies to both applications.

In May, 1984, PPC staff recommended that both amendments be rejected on various grounds including incomplete or inadequate: 1) biological justification and 2) consultation with other agencies, Indian tribes and interested parties. Consequently, the state and federal resource agencies and the Yakima Indian Nation have since devoted additional time and resources to collect new data and develop further information to supplement and/or revise the amendment applications. The objective is to meet the standards set by the PPC for evaluating proposals and hopefully achieve reinstatement of the two applications during the final decision-making process.

Historical Background

The benefits of constructing the Salmon Falls fishway were identified as early as 1956 in the Washington Department of Fisheries (WDF) Yakima River Rehabilitation Project report. However, no action was taken until about 1965 when WDF staff attempted to provide fish passage by excavating a crude, shallow channel around the right side of the falls using explosives (see Photos 1 - 4). These efforts were partially successful because following plants of juvenile coho and spring chinook salmon, small numbers of adult salmon were observed spawning above the falls during the late 1960's. However, several major flood events in the 1970's resulted in collapse and filling in of the passage channel with rock-debris. The proposed fishway project would fully develop the existing passage channel by: 1) removing fractured rock debris and bedload, 2) deepening the channel to provide adequate depth and flow, 3) stabilizing the rock walls of the channel by pouring concrete reinforcement sections, 4) adding baffles to dissipate water energy and to provide fish resting areas in the fishway, and 5) installing a trashrack and top gratings to keep debris and unauthorized people out of the fishway. The fishway would be designed to blend in with the natural surroundings since the falls is a scenic attraction.

The same floods that rendered the passage channel at the falls useless also severely damaged the river between the falls and Crow Creek by widening the

the river bed and depositing large amounts of gravel, sand and rubble. (Photos 5,6) Subsequently, the USFS performed an emergency *flood* rehabilitation project and removed most of the bedload accumulation. This work was done to protect Forest Road 197 and a nearby campground from future flood damage and to provide surface flow during the summer (before removal of the bedload accumulation, most summer flow was subsurface). However, the river is still too wide and shallow to permit satisfactory adult anadromous fish passage during low flows, the channel is unstable and riparian vegetation has not been re-established. The objective of the fisheries habitat rehabilitation project would be to stabilize and restore the productive capacity of the reach by re-establishing riparian vegetation on the banks and confining and deepening the channel to provide a good transportation corridor to the Salmon Falls fishway. Since the floods in the 1970's. no salmon have been observed spawning above the mouth of Crow Creek due to the habitat damage and passage problem.

Biological Justification

Potential Anadromous Fish Habitat

Amendment (US/704(e)(l)-5) as originally submitted stated that about five miles of currently inaccessible habitat could be used by spring chinook salmon and steelhead trout after laddering Salmon Falls. Unfortunately, this estimate was based on very limited field work performed by WDF staff in the early 1960's concurrent with the previously described passage work at Salmon Falls. No comprehensive physical surveys were performed to more precisely define the limit of anadromous fish use prior to submitting the two amendment applications.

In order to correct this data deficiency, ground surveys were performed on May I 1984 by WDF and the U.S. Fish and Wildlife Service (USFWS) and on June 29 by WDF, USFWS and USFS. Spot checks were made at several access points above Salmc Falls up to the confluence of the Middle and North Forks (R.M. 13.2) and continuing upstream on the North Fork Little Naches River to R.M. 2.5. On July 6, a low level aerial survey was conducted by the same three agencies to identify the probable limit of adult migration above R.M. 2.5 since ground access is very limited. The lower portions of the Middle Fork, South Fork, Blowout Creek Bear Creek, Jungle Creek and Pyramid Creek were also surveyed. Table 1 present the results of these surveys showing the number of linear miles and feet of accessible habitat, average stream width and habitat area in square feet (sq. f and square yards (sq. yds.) for the three species of interest --- spring chinook salmon, coho salmon and steelhead trout. Probable limits of upstream migration for each species were agreed upon by the participating *agency* biologists by estimating likely stream flow, width and depth at various locations for the tin of year that adult fish would be migrating and spawning. Since the surveys were done during the spring which corresponds to steelhead migration and spawning, we are confident about the migration limit selected for this species. The upper Little Naches system has not been surveyed during the spring chinook or coho salmon migration and spawning season (late August and early September; late October and November, respectively). However, probable migration limits have been tentatively identified based on observed reductions in spring flow as we moved upstream past important tributaries. The limits of salmon use will be verified during surveys conducted later this fall.

Clearly, Table 1 indicates that anadromous fish habitat was woefully underestimated in the amendment application. The participating biologists surveying the upper Little Naches drainage, some portions for the first time, were also impressed by the quality of the fish habitat. The watershed, particularly the riparian zone, is still pristine for the most part. Much of the watershed is on the National Forest and has been protected from poor logging and road building practices by the USFS. Water quality is excellent and summer flow adequate. Large organic debris and cover is abundant and the pool:riffle ratio is well balanced (see Photos 7 - 11). Spawning gravel is very abundant and the probable limiting factor for smolt production is the quantity of rearing habitat under summer low flow conditions. However, since virtually all the snowpack in the system had melted prior to the June 29 ground survey, we do not anticipate drastic reductions in the late August - September flow.

Smolt Production Potential

Table 1 also presents estimates of smolt production potential for the three species. Spring chinook and coho estimates are expressed in yearling smolts migrating in the spring. Steelhead smolts are two or three year old spring migrants.

Spring chinook production estimates were calculated on a 0.12 smolt/sq. yd. basis. This estimator was developed from data for seven, infertile, high elevation, forested tributaries in the upper Salmon River basin of Idaho. These streams are similar to the upper Little Naches system and chinook salmon rearing density data should be applicable. Sekulich found that the combined, average density of spring chinook pre-smolts in September was 0.42 fish/sq meter or 0.35 fish/sq.yd.(personal communication, Paul Sekulich, Fish Biologist, WDF). Bjornn (1978) studying spring chinook production in the upper Lemhi River in Idaho, found that about 65 percent of the fall pre-smolts out-migrated in the fall leaving only 35 percent to overwinter and migrate the following spring from upper basin spawning/rearing areas. Applying the 35 percent overwinter factor to the 0.35 fish/sq. yd. fall density factor yields a spring yearling smolt density of 0.12 smolts/sq. yd. or about 30,300 smolts. Using a 1.0 percent smolt to escaping adult survival rate yields an estimated adult return of about 300 fish.

However, it is important to note that Bjornn also found that 60-70 percent of all spring chinook migrants left the upper Lemhi River as fry in the spring immediately after emerging from the gravel; 16-22 percent left the upper rearing areas as fall pre-smol ts. Only 9-21 percent of the total migrants reared a full year-before leaving. Yakima Indian Nation biologists studydng the juvenile life history of Yakima River spring chinook have recently learned that fry in this basin also migrate from upper spawning areas to downstream rearing habitat (personal communication, Bob Tuck, Fish Biologist, Yakima Indian Nation). Therefore, yearling smolt production estimates may significantly underestimate total production of juvenile salmon from a production area. Little Naches spring fry and fall sub-yearling migrants should also contribute to total adult production and spawning escapement. "Nomad" fry production is dependent only on spawner escapement and egg deposition since the fry do not rear in the spawning areas. It seems unlikely, however, that the majority of these fry surviving to adulthood would return to spawn in the Little Naches system since rearing (and probably homing imprinting) occurs in downstream rearing areas. Fall sub-yearlings

migrants, however, are often fully as large as yearling smolts and have all summer to imprint to the spawning areas. These fish may contribute to total adult production and escapement at rates comparable to yearling smolts by utilizing downstream wintering habitat and then migrating to the ocean in the spring with yearling smolts from the upper spawning/rearing areas. If so, then the fall density of 0.35 fish/sq. yd. (88,500 migrants) may constitute an upper limit on effective spring chinook smolt production above Salmon falls

Coho smolt production potential was based on the methodology developed and published by WDF for the Puget Sound region (Zillges 1977). This procedure generates yearling smolt estimates for creeks less than six yards wide (at summer low flow) by multiplying accessible sq. yds. of habitat by 0.42 smolts/ sq. yd. For creeks and rivers greater than six yards in width, you multiply linear yards of accessible stream length by 2.5 smolts/linear yard. For glacial rivers with known lower productivity (relative to the "typical" Puget Sound coho stream), the above density factors are reduced by 50 percent. Although the upper Little Naches system is not glacial, it is definitely less productive than fertile, lowland Puget Sound streams and water temperatures are colder. Hence, we used the halved density factors in estimating production potential (0.21 smolts/sq. yd.; 1.25 smolts/linear yard). The resulting year1 smolt estimate is 39,600 fish. Again using a 1.0 percent smolt to escaping adult survival rate yields an escapement over Salmon Falls of about 400 adults In addition, any spring fry or fall sub-yearling migrants that survive contribute to total adult coho production that may or may not return to spawn in the upper Little Naches system.

Steelhead smolt production potential was based on the Washington Department of Game (WDG) methodology (personal communication, Larry Brown, District Fish Biologist, Region 3, WDG). WDG uses a density factor of 6.06 smolts/100 sq. meters (5.07 smolts/100 sq. yds.) of Weighted Usable Area (WUA) for juvenile steelhead rearing. WUA is a measure of usable habitat derived from fish preference data for various stream parameters. WDG has determined that on the average, 39.5 percent of gross stream area is considered WUA for steelhead rearing. Therefore, the estimates in Table 1 were generated by multiplying the gross area in yards by 0.395, dividing by 100 and multiplying by 5.07 smolts/100 sq. yds. This yields a total smolt estimate of about 6,500 fish---considerably less than the estimates for spring chinook and coho salmon. However, steelhead smolts rear two or three years in freshwater before smoltifying depending on growth rate. They are also 50-75 percent larger thar spring chinook or coho yearling smolts, so it is not surprising that the smol. estimate is significantly less than the two salmon estimates. Larger, older steelhead smolts are also more likely to survive at a higher rate than salmon smolts. WDG estimates that the smolt to escaping spawner rate is . percent for Yakima Basin fish which would yield an adult return of fish (personal communication,

Compensation for Lost Habitat

The proposed Little Naches River amendments provide the opportunity to add between 18 and 23 miles (depending on the species) of quality anadromous fish habitat to the remaining habitat still accessible to migratory fish. This may be the only opportunity to truly enhance the fish resources by addi

habitat that historically did not produce anadromous fish as opposed to restoring degraded habitat that formerly produced salmon and/or steelhead or significantly greater runs than currently. PPC Fish and Wildlife Plan elements that address the restoration of degraded habitat seek the ultimate (and perhaps unattainable) goal of increasing fish runs to historic levels. Amendments that attempt to establfsh fish runs in historically "barren" areas allow us to compensate for permanent losses of anadromous habitat that can not be restored to production. Appendix A is an inventory of anadromous fish habitat losses or degradation in the Yakima River Basin expressed in miles of affected habitat. Some losses are considered permanent, while other current losses may be restored to production by implementing adult and juvenile fish passage improvement projects, enhancing instream flows, etc. Permanent habitat losses total approximately 237 linear miles. The "new" habitat created above Salmon Falls will compensate for about 20 miles of that loss. This habitat will become increasingly important as the Basin's fish runs expand in response to adult and juvenile passage improvements constructed under Section 900 of the Fish & Wildlife Program. Already the spring chinook run is responding to improved instream flows during egg incubation and better operation and maintenance of existing fishways and fish screens--- this years run will exceed 2,600 fish, the biggest chinook run in more than 20 years.

Establishing Anadromous Fish Runs

In conjunction with the construction of the fish passage facility at Salmon Falls and habitat rehabilitation downstream, juvenile spring chinook, coho and steelhead will be released in the upper Little Naches system. WDF, WDG, USFWS and the Yakima Indian Nation intend to obtain and release fish prior to commencement of the two projects contingent on PPC approval of the two amendmnts. Early releases are desirable so that adult returns are available to utilize the completed projects as soon as possible. Potential fish release sites have already been identified during the recent ground surveys. Availability of fish on a year-to-year basis will largely govern the species, number, and size of fish at release. Once adult returns begin and natural reproduction starts to become a significant source of juvenile fish, hatchery releases will gradually be phased out to permit the developing stocks to sustain themselves on a natural production basis.

Project Evaluation

The effectiveness of the Salmon Falls fishway to pass fish and our success in establishing fish runs above the falls will be evaluated by conducting annual spawning ground surveys to count fish and redds. Since no anadromous fish currently utilize the area upstream from the mouth of Crow Creek, all adults and redds found upstream from that point will be directly attributable to the two projects. Spawning surveys are currently conducted by the state and federal fishery agencies and the Yakima Tribe from the mouth of the Little Naches River upstream to Crow Creek (spring chinook only). Upon completion of these projects and with the anticipated first returns of adults, the chinook surveys will be extended to cover all of the newly accessible area. Spawning surveys for coho and steelhead will also be performed annually.

Projects Costs

Salmon Falls Fishway

The fishway cost estimate in the amendment application simply stated a cost ranging from $308,000 to $400,000 without any explanation or detailed breakdown. This estimate has since been reanalyzed by Ken Bates, WDF fish passage engineer with the objective of refining the estimate. Fishway design data, hydrologic data, photographs and all available information was provided to Ken. Detailed topographic, hydraulic and geological data still has to be collected at the site before a precise estimate can be obtained. However, Ken's conceptual design for the fishway uses the existing right bank channel as a starting point. Construction would include: 1) rock excavation to widen and deepen the channel, 2) concrete reinforcement if excavation weakens the basalt channel walls, 3) 14 concrete vertical-slot baffles, 4) a trashrack at the fishway exit, and 6) steel gratings to cover the fishway pools. The estimated cost is $318,000 which includes an extremly cautious 44 percent for contingencies which reflects the lack of detailed design data at this time.

Cost Sharing

Salmon Falls Fishway

The Washington Department of Fisheries, U.S. Forest Service and the Yakima Chapter, Northwest Salmon and Steelhead Council-Trout Unlimited are prepared to bear a substantial portion of the project costs. WDF will develop the preliminary and final fishway designs, drawings and specifications using in-house expertise. Fisheries also intends to provide the skilled and unskillec labor necessary to construct the fishway from start to completion. Labor costs will be funded as authorized by H.B. 1087 which passed the State Legislature during the 1982 session. This bill authorized and funded a salmon habitat enhancement program utilizing about $5 million dollars left over from the terminated 1977 Salmon Enhancement Project (hatcheries). The current program allows WOF to hire both skilled and unskilled laborers to implement habitat enhancement projects under direct WOF supervision. Areas of the state with high unemployment in the timber and fishing industries are targeted for projects. WDF's Yakima Screen Shop has employed a 3-5 man crew since 1983 and it is the intent to use a skilled crew, as large as necessary, during the summer of 1985 to construct the fishway if funding for required materials can be obtained. However, the possibility exists that the 1984 Legislature may not reauthorize the program which must occur for the funding to continue into the 1985-87 biennium which begins July 1, 1985. Our objective in seeking PPC acceptance of this amendment is to obtain funds for materials if state funding of labor costs is assured. If the state enhancement funds are terminated, botl materials and labor costs will need to be funded through BPA. The U.S. Forest Service will collect necessary geological data at the site to permit completion of the final designs by WDF. USFS will also provide project administration an construction supervision. The Northwest Steelheaders sportsmens association will collect hydraulic data and make a detailed topographic survey at the fall to provide required design data. Members may also participate in constructIon activities. The NEPA Environmntal Assessment will be prepared by the USFS wi

the assistance of the Yakima Indian Nation. WDF will apply for and obtain all necessary State and County permits required for fishway construction.

Channel Rehabilitation Project

The Northwest Steelheaders sportsmens association will perform necessary topographic surveys needed to develop specific, detailed habitat rehabilitation plans for the flood damaged reach between Crow Creek and Salmon Falls. The USFS will develop the rehabilitation plan with assistance frown WDF, WDG, USFWS and YIN. The Northwest Steelheaders will implement the program using volunteer labor under USFS supervision.

USFS Road Construction & Fisheries-Related Costs

The USFS is completing a three year road reconstruction project on Forest Road 197 which parallels the lower Little. Naches River for about five miles. The roadway was widened to handle increased traffic, but this improvement threatened to significantly apcroach on the river at two locations where space was limited. In order to avoid excessive river encroachment, vertical concrete retaining walls were used instead of sloping, rip-rap embankment. A concrete retaining wall was also used adjacent to Salmon Falls (see Photo) rather than a rip-rapped embankment which would have encroached on the falls and could have made fish passage improvement more difficult by altering flow characteristics. A perched culvert blocking fish access into Jungle Creek was removed and replaced with an arched-plate culvert to permit passage of adult resident trout and steelhead to spawning areas. Total road improvement project costs directly allocated to protecting fish habitat has exceeded $200,000.

References Cited

Bjornn, T.C. 1978. Survival, production, and yield of trout and chinook salmon in the Lemhi River, Idaho. University of Idaho, Moscow. 57 p.

Zillges, G. 1977. Methodology for determining Puget Sound coho escapement goals, escapement estimates, 1977 pre-season run size prediction and in-season run assessment. Washington Dept. of Fisheries, Technical Report No. 28.

Table 1. Linear miles of accessible rearing habitat, average stream widths, rearing habitat area and smolt production potential for the Llttle Naches River system upstream of Salmon Falls (R.M. 4.4) by reach and species.

Species	Stream Reach	Miles (feet)	Ave. Width in ft.	Sq. Ft.	d s .	Smolt Production Est
Spring Chinook Salmon	mainstem L. Naches and North Fork to Pyramid Ck.	12.3 (64,944)	30	1.948.320	216,480	25,978
	Blowout Ck.	0.5 (2,640)	8	21,120	2,347	282
	South Fork L. Nacho	0.75 (3,960)	20	79,200	8,800	1,056
	Bear Creek	0.125 (660)	8	5,280	587	70
	mainstem side channels and brafds	4.2 (22,176)	10	221,760	24,640	2,957
	Totals	17.9 (94,380)		2,275,680	252,853	30,343
Coho Salmon	mainstem L. Naches and North Fork	13.8 (72,864)	30	2.185.920	242,880	30,360
	Blowout Ck.	1.0 (5,280)	8 20	42,240	4,693	985
	South Fork L. Naches	1.0 (5,280)		105,600	11,733	2,463
	Bear Ck.	0.125 (660)	B	5,280	587	123
	mainstem braids and side channels	4.6 (24,288)	10	242,880	26,987	5,667
	Totals	20.5 (108,372)		2,581,920	286,880	39,598
Steelhead Trout	mainstem L. Naches and North Fork	15.4 (81,312)	30	2.439.360	271,040	5,428
	Blowout Ck.	1.0 (5,280)	8	42,240	4,693	94
	South Fork L. Naches	1.25 (6,600)	20	132,000	14,667	294
	Bear Ck.	0.125 (660)	8	5,280	587	12
	Pyramid Ck.	0.25 (1,320)	6	7,920	880	18
	Middle Fork L. Naches	0.5 (2,640)	12	31,680	3,520	70
	mainstem braids and side channels	5.1 (26,928)	10	269,280	29,920	599
	Totals	23.6 (124,740)		2.927.760	325,307	6,515

Appendix A: Yakima River Basin Anadromous Fish Habitat Losses

Type I: Irretrievable habitat losses upstream of unladdered storage dams with no potential for future passage facilities (adult and juvenile).

These estimates were made by Bob Tuck, Fish Biologist, Yakima Indian Nation. He did not include small tributaries that at least a portion of which could have provided suitable habitat for coho and steelhead. The limit of historical passage was based on stream gradient derived from USGS topographical maps. Loss of this category of habitat resulted in the total elimination of sockeye salmon in the Yakima Basin.

Storage Project	Mainstem Miles Lost Above Project	Outlook For Future
Keechelus Dam	5	permanent loss
Kachess Dam	.12	" "
Cle Elum Dam*		
Cle Elum River	25	" ?
Cooper River	9	" ?
Waptus River	10	" ?
Bumping Dam	8	" "
Tieton Dam	38	" "
Total	107 miles (63 miles guaranteed loss)	

* The feasibility of providing adult and juvenile fish passage at Cle Elum Dam will be studied as provided by PPC Fish & Wildlife Program Measure 904(d)(6). If the results of the feasibility study indicate technical and economic viability, then these losses may be retrievable.

Type II: Habitat downstream of unladdered storage projects rendered unusable or marginal due to reservoir operations or passage problems at diversion dams.

These estimates were also made by Bob Tuck. This category of habitat would be or is used by spring chinook and coho salmon and steelhead trout. This type of

loss is not necessarily irretrievable with establishment of instream flows, ramping rate , and fish passage improvements.

River Reach	Miles Affected	Outlook For Future
Yakima River from Keechelus Dam and Kachess Dam to Lake Eas ton	13	Restoration through construction of adult & juvenile fish passage facilities at Easton Dam est. of instream flows
Tieton River from Tieton Dam to confluence with Naches R.	21	restoration by establishing instream flows and ramping rates
Total	34 miles	

Type III: Tributary habitat downstream of unladdered storage projects rendered unusable or marginal due to low instream flow, fish passage problems, physical habitat degradation, etc.

Virtually all of the perennial tributaries had populations of anadromous fish prior to the beginning of irrigated agriculture by white settlers in the 1850's. These small, independent tributaries supported runs of steelhead and coho salmom but probably were not extensively used by chinook salmon (with the exception of the Teanaway River system). The following creeks no longer support salmon runs; some have remnant runs of steelhead because adult steelhead migrate and spawn in the spring before irrigation diversions reduce flow rendering the creek unsu Losses are primarily the result of over-appropriation of streamflow, adult passage obstruction or lack of juvenile fish screens, and physical habitat destruction by removal of riparian vegetation, siltation, channel alteration, reduced water quality, etc. Linear miles of affected habitat were estimated by Easterbrooks using a river mile index and historical information obtained from "Survey of the Columbia River and Its Tributaries - Part IV" by Bryant and Parkhurst (1950). Since no one really knows the exact historical limits of fish utilization in these creeks, the following values should be considered rough approximations---the true values could be more or less.

Tributary	Estimated Miles Affected	Outlook for Future
Satus Creek	40	Improved fish passage at Satus Diversion Dam shoul increase steelhead, possi coho
Toppeni sh Creek	60	Improved passage (adult I juvenile) at two dams sho benefit steelhead, possit salmon.

Tributary	Est. Miles Affected	Outlook for Future
Ahtanum Ck.	38	Permanent Loss
Cowiche Ck.	7.5	" "
Wenas Ck.	15	" "
Umptanum Ck.	7.5	" "
Wilson Ck. - Naneum Ck. system	30	" "
Manastash Ck.	20	" "
Taneum CK.	13	passage restoration under Section 900--steelhead and coho to benefit
Swauk Ck.	12	Permanent Loss (for salmon)
Teanaway River	39	" " (for salmon)
Big Creek	5	" " " "
Total	287 miles (174 permanent for salmon)	

JOHN SPELLMAN
Governor

FRANK LO
Direc

STATE OF WASHINGTON

DEPARTMENT OF GAME
2802 Fruitvale Boulevard
Yakima, Wasyinton 98902

May 11, 1984

Steve Kessler, Fisheries Biologist
Wenatchee National Forest
630 Highway 12
Naches, WA 98937

Dear Steve:

The inter-agency meeting that we participated in on May 2nd to discuss Little Naches River rehabilitation project was productive and informative.

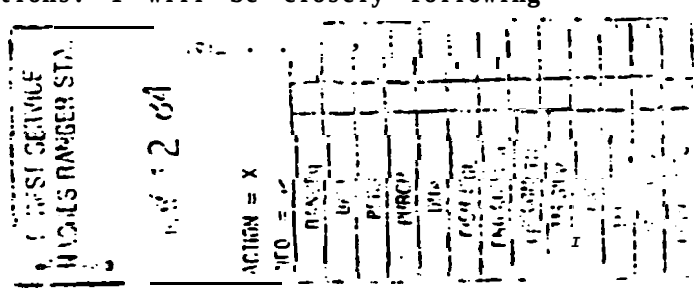
I understand that two projects are proposed--laddering salmon falls and rehabilitating one-half mile of the Little Naches River. As stated at the meeting, the Department of Game does not object to these projects. We recognize the potential to increase the anadromous fishery resource, particularly steelhead.

As you are aware, fish passage, screening, and water flow problems must be solved before anadromous fish runs can be expected to increase in the Yakima River system. There is movement in that direction.

Perhaps more critical to the Yakima system anadromous fishery resource is the Columbia River Management Plan that is being negotiated by state, federal, and Indian agencies. Depending upon the outcome of those negotiations, the anadromous fishery resource on the Yakima River has potential to increase, decrease, or stabilize.

The potential for competition between resident and anadrcmous fish was brought up at the meeting. Plans for stocking anadronous fish were discussed, in general. Specific fish stocking plans will be developed in the future.

This brings me to one concern that was not brought up at the meeting--that of stocking levels. Smolt planting levels are not of great concern, but fry planting levels are. Massive plants of anadromous fish fry or pre-smolts have the greatest potential to impact the resident fishery resource. Release of a few hundred thousand spring chinook, coho, or steelhead fry should not have a significant effect on resident trout populations, but release of several million fry may result in significant decreases in resident trout populations. I will be closely following development of stocking programs.



Finally, we don't have a good handle on resident trout populations above the falls. Perhaps you **and I can get together this summer and conduct electroshocking surveys.**

Sincerely,

THE DEPARTMENT OF GAME

James L. Cummins

James L. Cummins
Regional Fish Biologist

JLC: jo

cc: **Larry Popejoy**
Sam Wright
Jim DeShazo
John Easterbrooks
Gary Malm
Bob Tuck
Herm Stil water

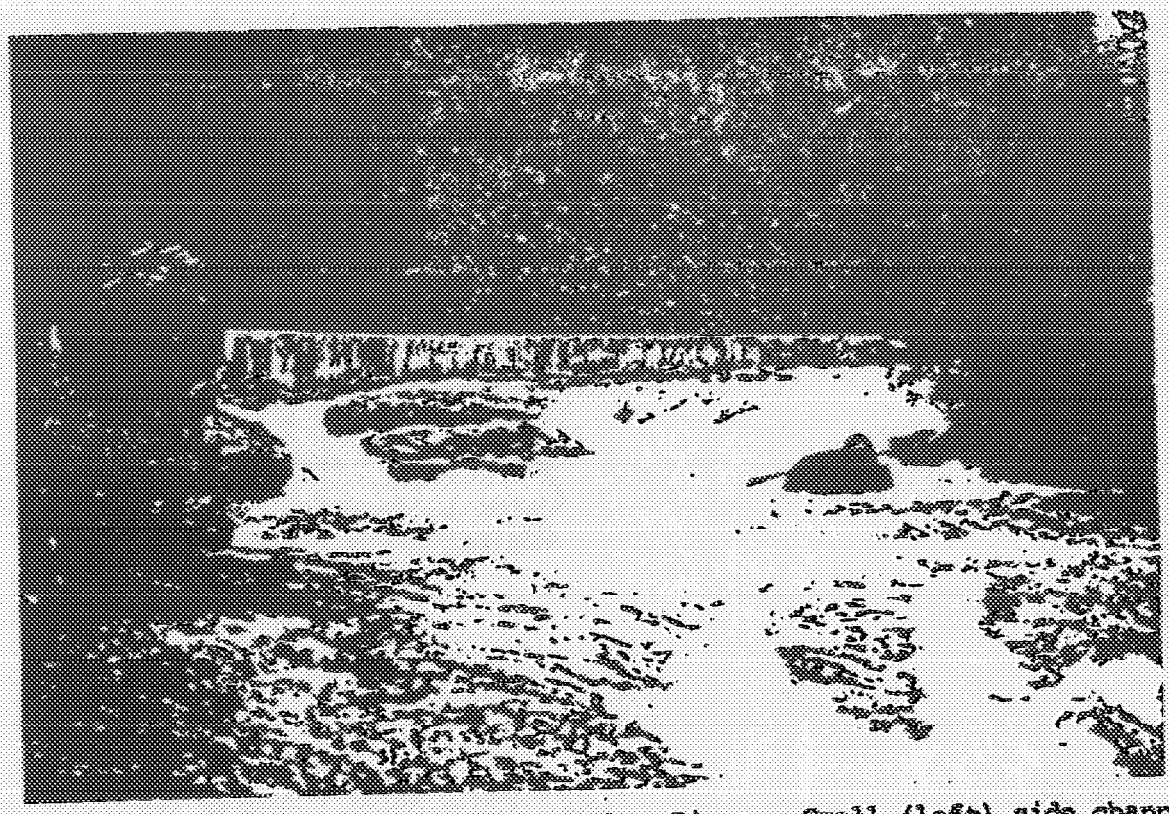


Photo #1. Salmon Falls on the Little Naches River. Small (left) side channel and main (right) channel. Concrete retaining wall in background.

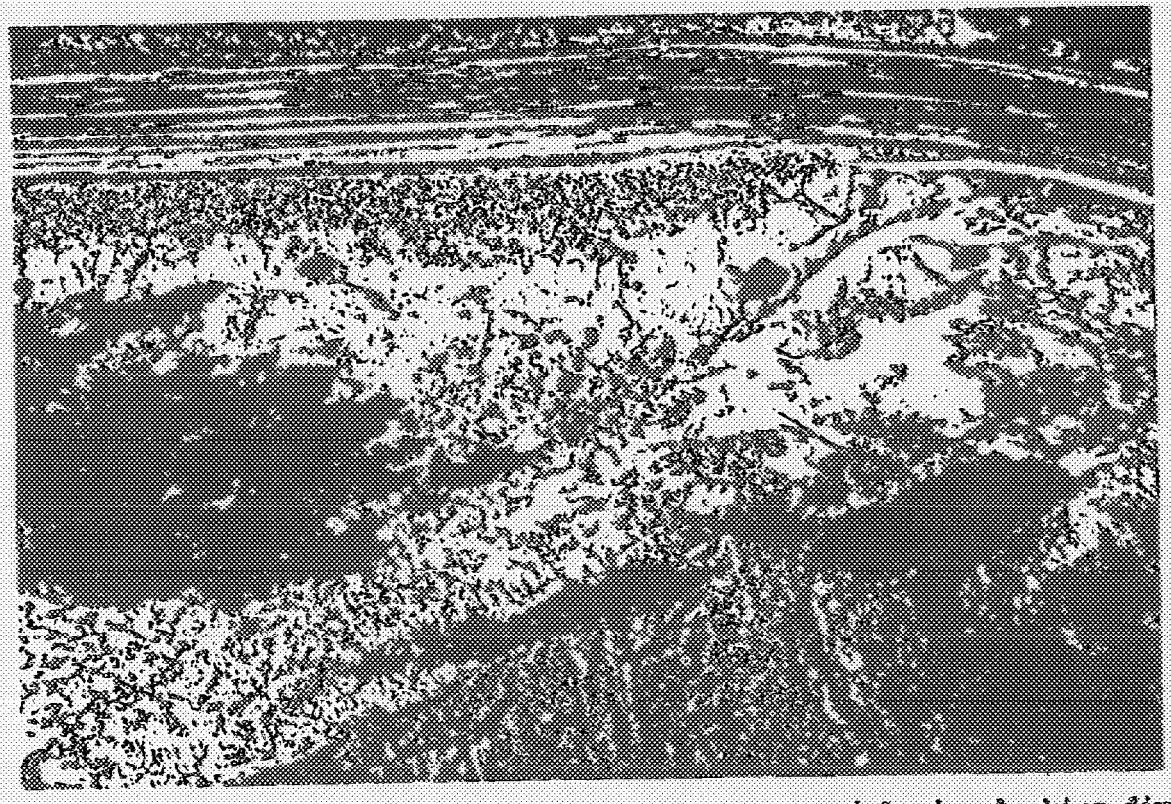


Photo #2. Salmon Falls on the Little Naches River. Aerial view looking direct down on the site, and stream reach immediately below falls. Fishway would most likely be constructed in channel near the road.

Photo #3. Salmon Falls—left side channel. Location of proposed fishway. Crude channel was excavated previously by blasting.

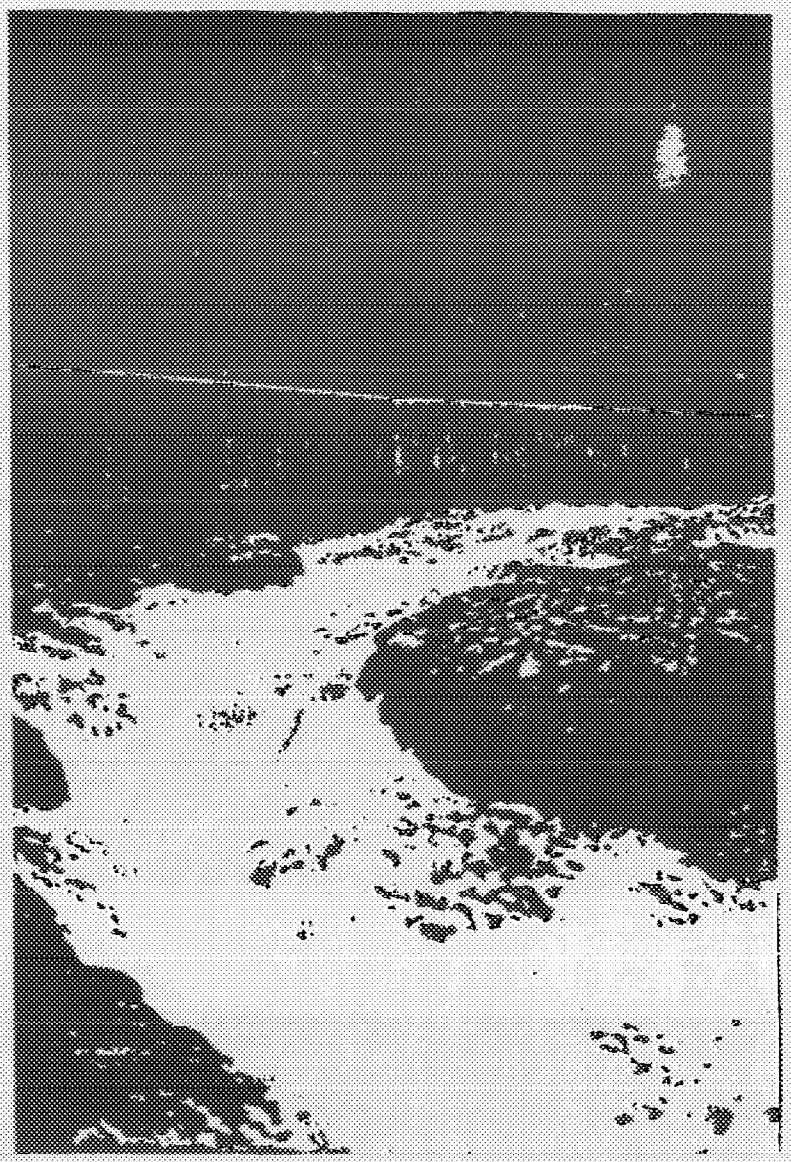
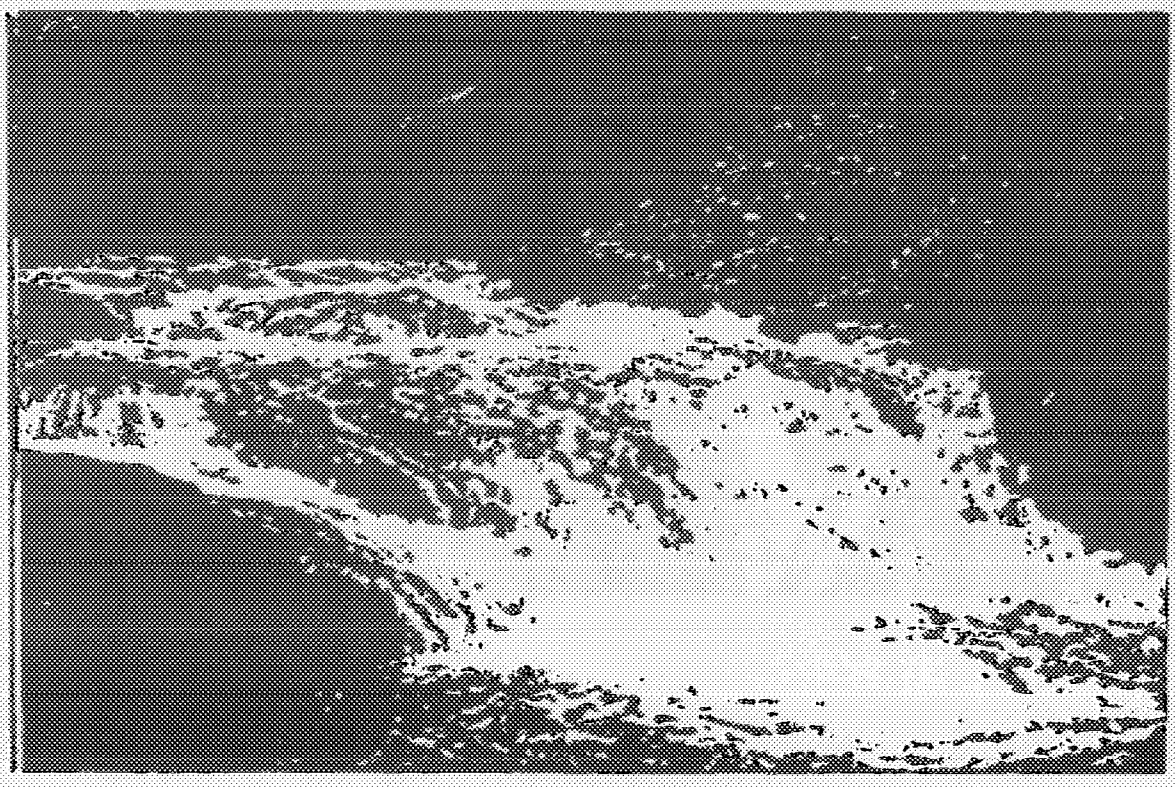


Photo #4. Salmon Falls—main portion. Approx. a six foot bedrock drop with no relief pool at the upper end.



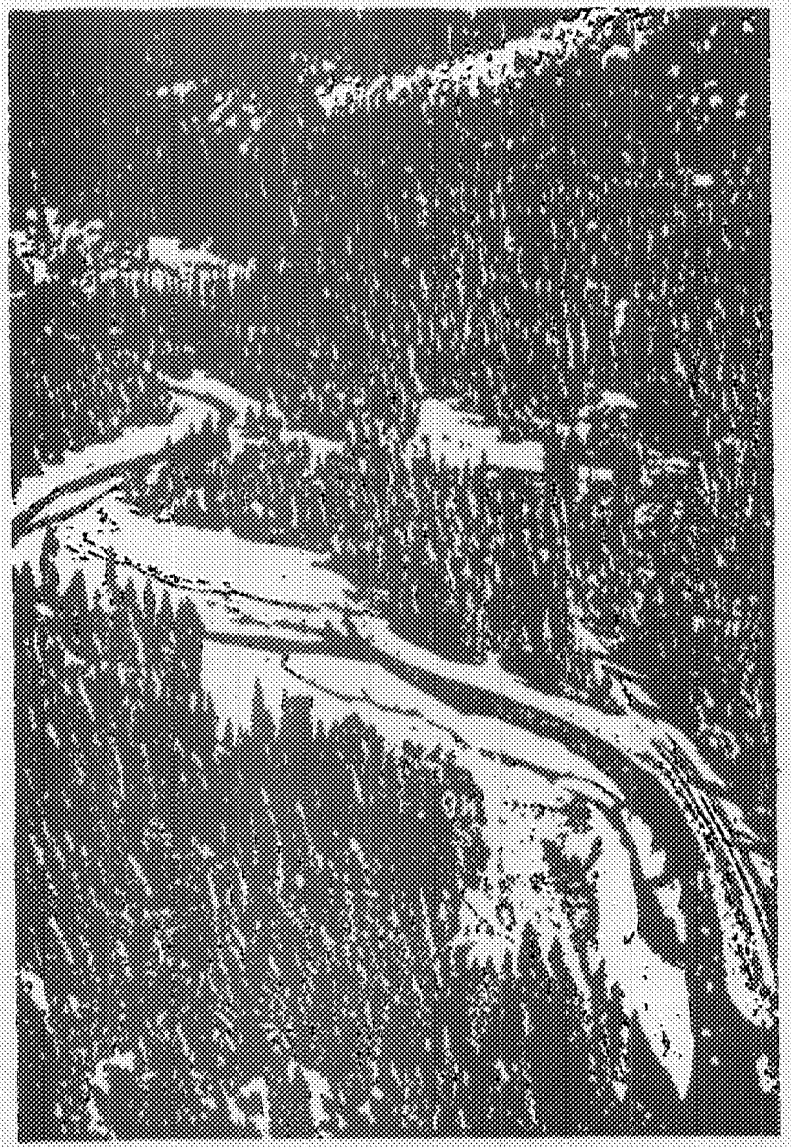


Photo #5. Little Naches River Rehabilitation Site. Aerial photo looking upstream through the reach from Quartz Creek.

Photo #6. Little Naches River Rehabilitation Site. Aerial photo downstream through a portion of the reach. Quartz Creek bridge at downstream end of photo.

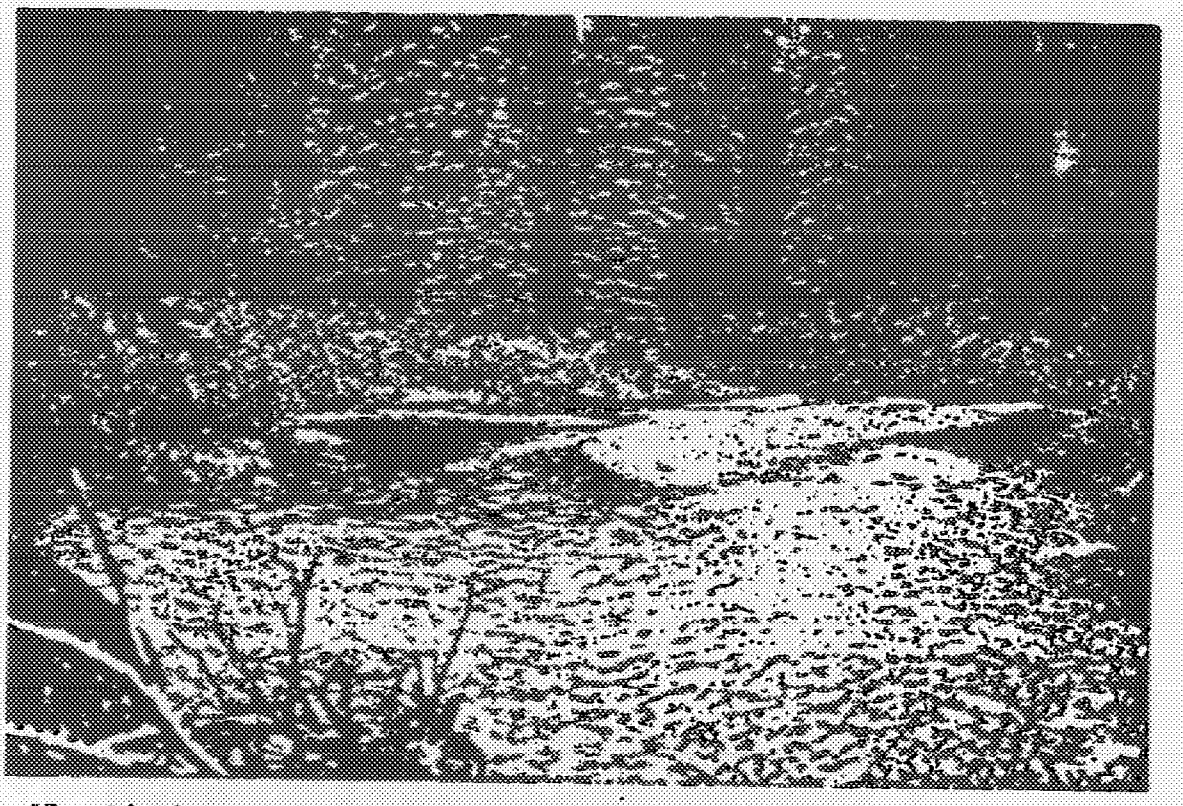


Photo #7. Little Naches River at the confluence with the South Fork (coming in from the left), R.M. 9.9. Excellent spawning and rearing habitat in this area (6/29/84).

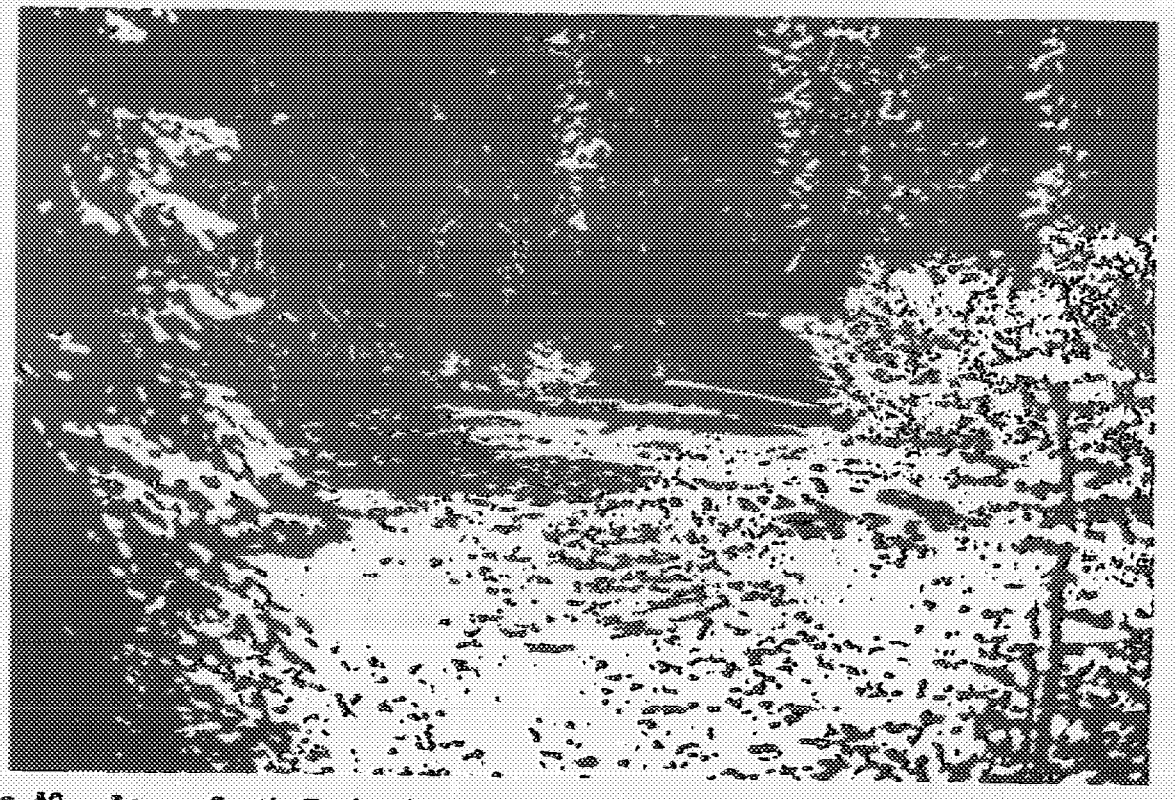


Photo #8. Lower South Fork Little Naches River about 500 feet above the mouth. River is about 20-25 feet wide with excellent spawning and rearing habitat. (6/29/84).

Photo #3. Little Naches River gorge — starts at about R.M. 6.8 and extends upstream to about R.M. 8.0. River is a series of cascades and small falls, but is not an obstacle to adult fish passage (6/29/84).

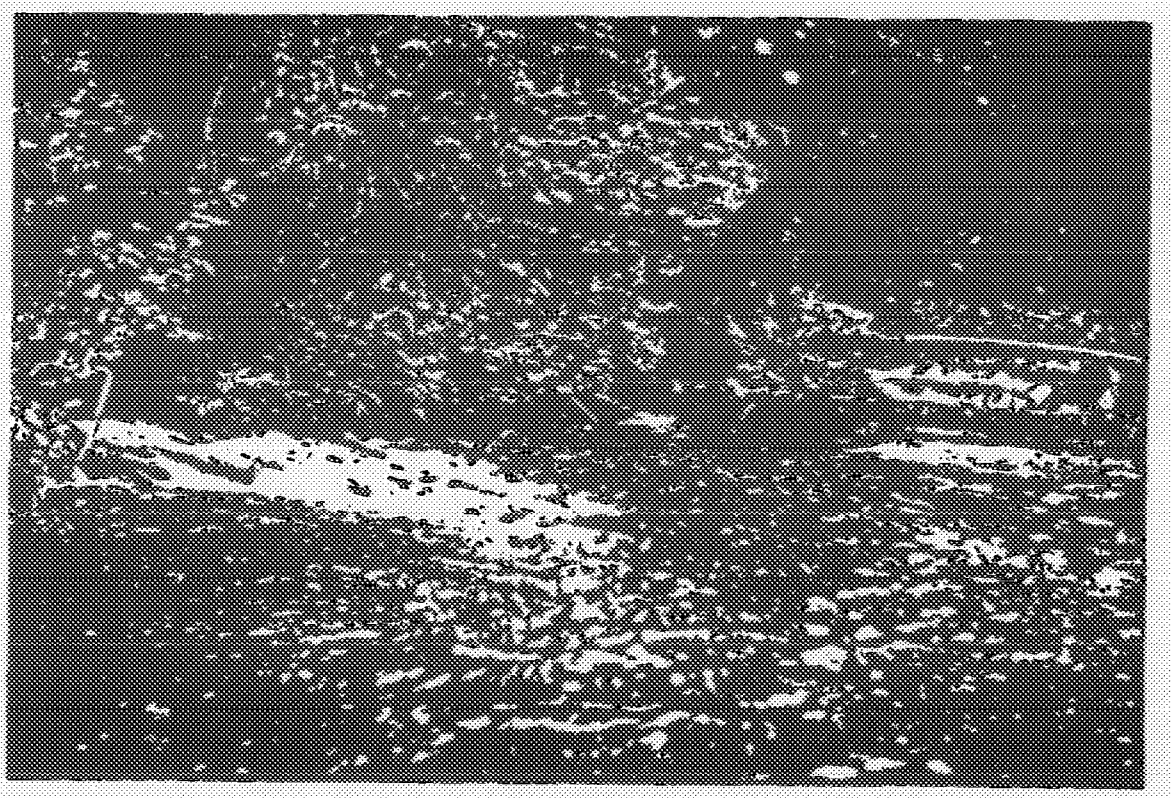


Photo #10. North Fork Little Naches River at the confluence of Pyramid Creek. This point, 12.3 miles upstream from Salmon Falls, is considered the limit of spring chinook migration (6/29/84).

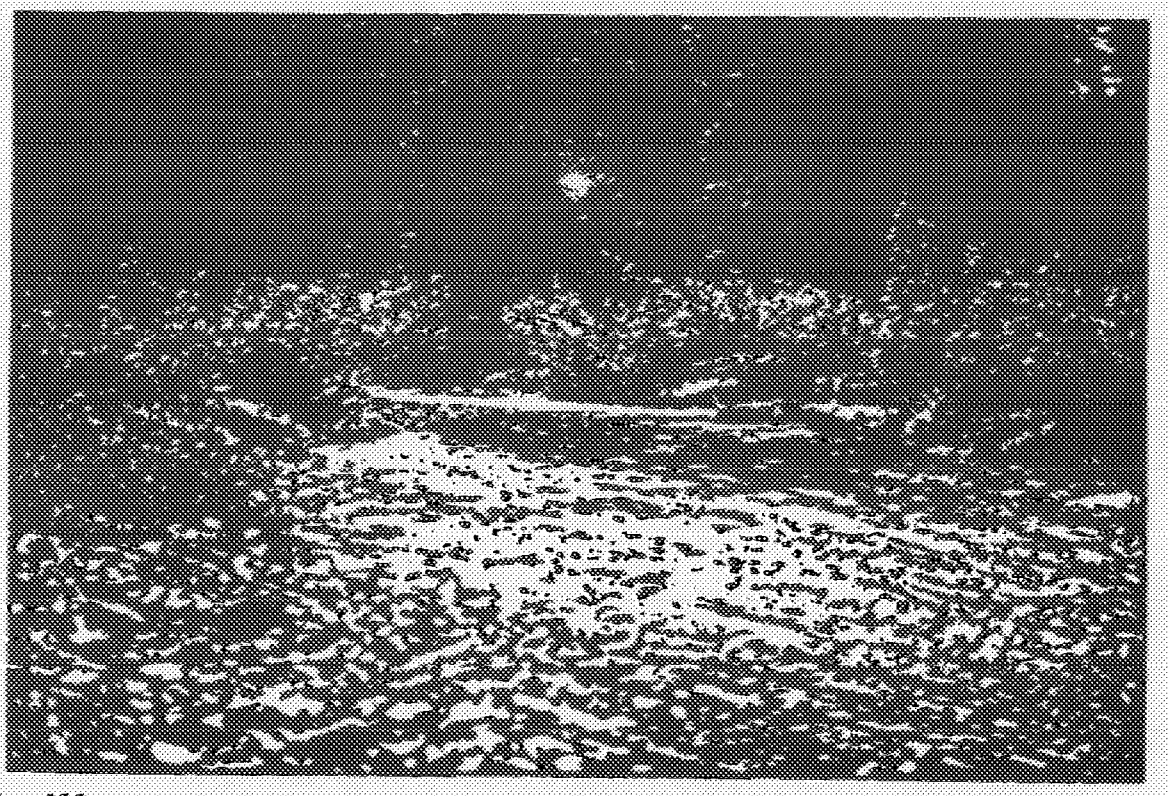


Photo #11. North Fork Little Naches River about .25 miles upstream from Pyramid Creek -- habitat in this area would be used by coho and steelhead (6/29/84).

VICTOR ATIYEH
GOVERNOR

Department of Fish and Wildlife
506 S.W. MILL STREET, P.O. BOX 3503, PORTLAND, OREGON 97208

December 27, 1984

Mr. Gregory E. Drais, Chief
Biological Studies Branch PJS
Bonneville Power Administration
PO Box 3621
Portland, OR 97208

Dear Greg:

Attached are ODFW's proposed new starts for FY 1985 funding. The material for Joseph Creek and the Upper Grande Ronde River was packaged with U.S. Fores Service work and includes ongoing as well as new work. This was done since the answers to the 14 questions included in the recent NPPC amendment document were developed by USFS and ODFW personnel as a single package for each of the two stream systems. We cannot subdivide the data to show the benefits of each small tributary to Joseph Creek and the Upper Grande Ronde River.

The material for the Powerdale Dam Project and the habitat improvement work on Fifteenmile and Bakeoven-Buckhollow creeks mainly consists of answering the questions and providing information on costs, time schedules, and our coordination efforts. If the Council and BPA are satisfied with our response to the questions, then it would be helpful to know your preferred format for a detailed proposal.

Sincerely,

Larry

LARRY KORN
COLUMBIA RIVER PROGRAM MANAGER

lkd
D1-#38

Attachments (2 of each)

cc Aney (Memo only)
Berry " "
Golden " "
Newton " "
Noll " "
West " "
Willis (with attachments)
Witty (Memo only)

FIFTEENMILE CREEK HABITAT IMPROVEMENT

(ODFW)

II. Fifteenmile Creek Habitat Improvement Project, 704(d) (1) Table 4a

A.

(i) Smolt production in the Fifteenmile Creek drainage is presently confined to the upper reaches of all the creeks in the system, (**Ramsey,** Eightmile, Fivemile and Fifteemile Creek). Much of this production is on USFS lands. The attached table illustrates the estimates made for smolt production on the streams within the drainage. Presently no anadromous fish utilize Dry or Pine creeks but historical accounts do indicate at least some use of Dry Creek.

(ii) Current estimates put the run of winter Steelhead into the Fifteenmile Drainage at about 250 fish. Counting facilities do not exist on the system hampering our ability to make accurate estimates. It is anticipated that at least a six-fold increase in adult escapement can be expected upon completion of passage and habitat improvement projects recommended in the project proposal. Anticipated installation of an adult trapping facility in 1985 will give us the ability to make definitive estimates.

(iii) Redd count information indicates a decline in the numbers of fish entering the system since the 1964 flood. Recent redd counts indicate the run at about one-third of the numbers seen prior to the 1964 flood.

being discussed with the Indian tribes involved in this fishery.

(viii) Two diversion screens exist on the mainstem Fifteenmile Creek at this time. An unknown number of other diversion sites exist throughout the drainage. Screening needs will have to be evaluated after a thorough inventory of these sites is developed.

(ix) Habitat Improvement measures, including riparian enhancement, will benefit resident as well as anadromous fish stocks. Passage improvement is intended to provide utilization of spawning and rearing habitat historically used by anadromous fish and will have limited impacts on the resident population.

(x) Habitat destruction caused by two major floods in 1964 and 1974 and the continued destruction of riparian habitat by agricultural practices are some of the major limiting factors to production in the Fifteenmile Creek drainage. Siltation and lethal temperatures caused by inadequate farming practices, the lack of riparian vegetation and over appropriation of irrigation water contribute to the problem. Passage barriers limit the escapement of adults into the remaining useable habitat in the upper reaches of many of the streams in the system.

(xi) Implementation of the proposed habitat and passage improvement measures will directly benefit the eastern-most run of winter steelhead known to exist on the Oregon shore of the Columbia River.

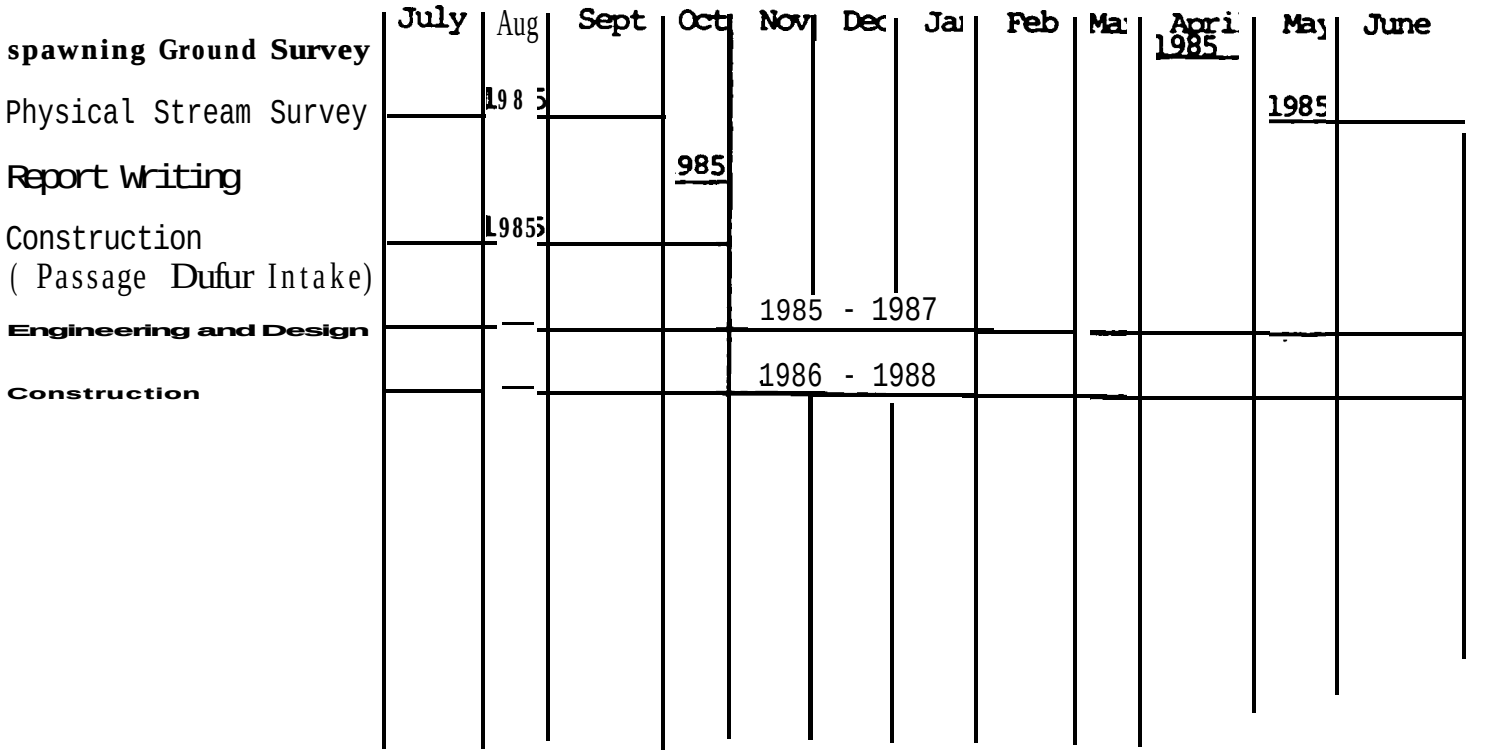
Flow and temperature data will be gathered to evaluate the effectiveness of those habitat improvement measures implemented during the project. Riparian recovery will also be evaluated using current methods of vegetative analysis. All estimates of production will be compared to data available prior to the implementation of habitat improvement measures when possible.

B. Preliminary Cost Estimates

1) Stream Inventory	$20,000
Engineering and Design	$180,000
2) Construction	$460,000
3) Annual Maintenance	$16,000/year
	$676,000

C. Preliminary Time Schedule for Implementation of Habitat and Passage Improvement Measures

Fifteenmile Creek Drainage



Smolt Production Estimates Continued

Stream Section	Existing (Smolts/mile)	Potential w/ enhancement (smolts/mile)
Fivemile Creek (rM 10-15)	0	250
Dry creek	0	100
Pine Creek	0	100

IZEE FALLS FISH PASSAGE

WORK STATEMENT

Bureau of Land Mangement
Burns District

Anadromous Fish Habitat Improvement Program

Burns, Oregon 97720

Project Leader: Ron Wiley
Phone: (503) 573-5241

INTRODUCTION

This work statement constitutes a schedule of planned habitat improvement and passage development projects on the Burns District for the period FY 85. These projects have been closely coordinated with the Oregon Department of Fish and Wildlife (ODFW) and are included and prioritized in the John Day River Basin Working Paper - Recommended Salmon and Steelhead Habitat Improvement Measures, January 1984 developed jointly by the Confederated Tribes of the Umatilla Indian Reservation and ODFW. These projects have been proposed in the John Day Basin Aquatic Habitat Management Plan a BLM planning document nov undergoing internal reviews.

This plan was developed to provide a comprehensive, District-wide schedule and a consistent, efficient work plan for both the Burns District and the Bonneville Power Administration (BPA), and allow the implementation of the Northwest Power Planning Council (NWPPC) measures with the greatest efficiency.

Project II: Izee Falls Fish Passage

FY 85 Estimated Project Costs

ITEM		DOLLARS BLM		DOLLARS ODFW
a. Salaries		5,900		95,000
b. Travel and Transportation		100		1,000
c. Equipment and Materials		0		0
d. Contract Costs		0		0
e. Overhead	17.8%	1,068	20.0%	19,200
Total FY 85 Budget		7,068		115,200

The Burns District, Bureau of Land Management has been requested to provide information on the biological basis for FY 85 new starts as outlined in Section 704 (d) (1) A of the Northwest Power Planning Council's Amendment Document. In order to avoid any misunderstanding on what constitutes a new start, we are providing a response for all streams in the District's South Fork John Day River Sub-basin anadromous fish improvement program.

1. Existing Smolt Production, Existing Potential for Smolt Production, and Potential with Habitat or Passage Improvement.

   Response – Existing estimates on smolt production and spawning/rearing habitat are estimated on a stream-by-stream basis in the attached table (Table 1).

2. Existing Escapement and Potential Escapement.

   Response – The enclosed Table 1 shows an estimate of the existing and potential escapement on a stream-by-stream basis within the South Fork John Day Basin.

3. Existing Wild and Naturally Spawning Stock Trends and Conditions.

   Response – South Fork John Day River Basin – There has not been, nor is there any plan in the foreseeable future for any stocking of the streams within the South Fork John Day River system with hatchery reared fish. The estimation of smolt and adult production in Table 1 is based entirely on wild and naturally spawning stock.

4. Benefits to Multiple Anadromous Species and Runs.

   Response – The planned work is designed to enhance summer steelhead. One of the primary benefits expected from the proposed habitat work will be the increase in juvenile survival by increasing rearing area. The steelhead will be the only benefactors from this increased rearing area, and no other anadromous fish species use the South Fork system for spawning, rearing, and or migration.

5. Extent and Condition of Habitat Available Through Passage Restoration.

   Response – Full realization of fishery benefits from the planned enhancement work is dependent on adequate passage past the three Columbia River dams. On the South Fork John Day River there is a natural waterfall which blocks the potential use for spawning and rearing of about 81 miles of stream. Included in the FY 85 projects are plans to remove this barrier in 1986.

9. **Effects of Project on Resident Fish Stocks.**

Response - The primary resident salmonid species with the South Fork John Day Basin is the rainbow trout. Any work done to improve anadromous fish spawning and rearing habitat will also benefit these resident fish stocks. A primary benefit will be : a) an increase in shade resulting in reduced summertime water temperatures; b) an increase in streamside cover, thereby potentially increasing the insect food supply; and c) an increase in quantity and quality of pools to provide a more uniform pool/riffle ratio to enhance aquatic food production and better the distribution of resident stock throughout the individual stream5 and the entire system. In some cases the increase in anadromous fish production may cause a decrease in resident fish stocks.

10. **Analysis of All Factors Limiting Existing and Potential Production.**

Response - The primary factors limiting existing and potential production of anadromous fish in the South Fork John Day Basin is shortage of quality deep water rearing habitat, high summertime water temperatures, lack of adequate riparian vegetation (both natural and man caused), and instream sediment. These and other limiting factors are more thoroughly discussed in "John Day River Basin - Oregon - Appraisal Report" - December 1981, Bureau of Reclamation and "Working Paper" - John Day Basin - Recommended Salmon and Steelhead tiabitat Improvement Measures - January 1984 by Confederated Tribes of the Umatilla Indian Reservation.

11. **Emphasis on Protection, Mitigation, and Enhancement of Upriver Stocks of Anadromous Fish.**

Response - The mouth of the John Day River lies upstream of three major dams on the Columbia River. Anadromous fishery access to and from the drainage is contingent on fish passage past these dams. Various measures implemented over the years such as improved design of fish-ways spillway modifications, improved spill patterns, improved design of fish ladders and entrance placement, improved transportaton and passage of juvenile fish around the dams and improved water management to aid juvenile passage, are resulting in more and more adults returning to their spavning streams. Federal, state, and tribal agencies are working together to improve downstream passage around the three lover Columbia River dams by means of the smolt transport program; a program which is proving to be very beneficial for upriver stocks of steelhead. The most recent of these efforts, the Water Budget, is also being used to enhance downstream survival of juvenile salmonids by providing adequate springtime flows in the Columbia River so that instream passage of juveniles around the dam is more effective. The provision of optimum spawning and rearing habitat within the John Day Basin will complement these already ongoing efforts to mitigate and enhance upriver stocks of anadromous fish.

TABLE 1. ESTIMATED ANADROMOUS FISH PRODUCTION WITHIN IMPACT AREA OF FY-85 PROJECTS*

Stream	Estimated Current Production		Estimated Potential Production		Estimated Production Increase Due To Enhancement		Total	
	Steelhead Spawners	Steelhead Smolt	Steelhead Spawners	Steelhead Smolt	Steelhead Spawners	Steelhead Smolt	Steelhead Spavners	Steelhead Smolt
South Fork John Day								
Below Izee Falls	383	58,000	494	74,820	272	41,180*	766	116,000*
Above Izee Falls**	-0-	-0-	-0-	-0-	152**	23,056**	152**	23,056**
Deer Creek	73	11,025	94	14,193	188	28,444	282	42,637
Sunflower Creek**	-0-	-0-	-0-	-0-	48	7,272	48	7,272
Packwood Creek**	-0-	-0-	-0-	-0-	48	7,272	48	7,272
Pine Creek**	-0-	-0-	-0-	-0-	40	6,060	40	6,060
Rosebud Creek**	-0-	-0-	-0-	-0-	48	7,272	48	7,272
Utley Creek**	-0-	-0-	-0-	-0-	44	6,666	44	6,666
Alder Creek**	-0-	-0-	-0-	-0-	24	3,636	24	3,636
Spoon Creek**	-0-	-0-	-0-	-0-	20	3,030	20	3,030
Flat Creek**	-0-	-0-	-0-	-0-	44	6,666	44	6,666
Corral Creek**	-0-	-0-	-0-	-0-	48	7,272	48	7,272
Levis Creek**	-0-	-0-	-0-	-0-	16	2,424	16	2,424
Lonesome Creek**	-0-	-0-	-0-	-0-	28	4,242	28	4,242
Venator Creek**	-0-	-0-	-0-	-0-	48	7,272	48	7,272
Bear Creek**	-0-	-0-	-0-	-0-	40	6,060	40	6,060
b-Basin Totals	456	69,025	588	89,013	1,108	167,824	1,696	256,837

Includes increases due to enhancement work other than FY-85 projects.

Based on existing habitat conditions. Additional habitat enhancement will result in at least 100% additional increase.

12 **The Extent of Coordinated Tributary Sub-basin Planning for Habitat Management, Improvement, and Passage Restoration.**

Response – The Oregon Department of Fish and Wildlife, USDA Forest Service, USDA Soil Conservation Service, USDI Bureau of Land Management, Confederated Tribes of the Umatilla Indian Reservation, and private landowner8 through their Soil and Water Conservation Districts have put considerable time and effort into coordinated sub-basin planning. As indicated in "Working Paper" – John Day River Basin Recommended Salmon and Steelhead Habitat Improvement Measures – January 1984, the ODF&W, Forest Service, and Umatilla Tribes have been working closely together in the planning for, and implementation of, fishery and wildlife improvement projects on anadromous fish streams within the entire John Day drainage. As it relates to anadromoue fish habitat improvement, situation is viewed as a four-way partnership of private landowners, Indian tribes, BLM, and ODF&W.

13. **Plans for Protection of the Enhancement Investment From Land Use and Other Activities in the Tributary Sub-basin.**

Response – In addition to controlling livestock use in riparian areas, other land use activities such as improved livestock grazing practices, road construction and timber harvest procedures will be designed to protect the riparian areas and therefore the enhancement investment. On BLM lands, the maintenance and enhancement of water quality and stability and protection of water courses and riparian areas will have priority over uses described or implied in all other management direction standard or guidelines. Grant County Plans include provisions for a structure setback of at least 100 feet from streams and wetlands for lands zoned for agriculture, forestry, and recreation.

14. **A Means to Evaluate the Effectiveness of the Projects.**

Response – Initial habitat inventory evaluations are conducted on all streams at least one year *prior* to the start of construction. Ths inventory includes the physical stream characteristics, vegetation mapping, and identification of potential for habitat improvement including plantings and instream structures.

A similar plan is currently being developed by the ODF&W for inventory and evaluation of fish populations and improvement potential.

The **above information was compiled by:**

Bureau of Land Management
Oregon Department of Fish and Wildlife

6. **Requirements for Hatchery Supplementation, Including Genetic and Disease Considerations.**

Response – As stated in the Oregon Department of Fish and Wildlife's "Wild Fish Management Policy," which was adopted in 1978: "The protection and enhancement of wild stocks will be given first and highest consideration. Hatchery or foreign stocks of fish will be released only where deemed necessary to provide optimum benefits for the resource." Management options, in priority order, harvest strategies and other constraints will be:

"1. Management Exclusively for Wild Fish: Harvest will be regulated to maintain production potential, genetic integrity, and genetic size diversity of the fish populations. Extra protection will be provided depressed stocks that are being revived."

"2. Manage for Wild Plus Hatchery Fish: ---'

"3. Manage Exclusively for Hatchery Fish: --"

It is presently planned to manage steelhead in the South Fork John Day Basin according to No. 1 above.

7. **Ocean and River Harvest Management Consideration.**

Response – Summer steelhead are not harvested to a significant degree in the ocean fisheries. Tribal'and recreational fisheries on summer steelhead in freshwater are allowed due to increases in escapements. Efforts are being made by the ODFW to protect wild fish when harvesting hatchery summer steelhead. Presently, South Fork John Day System streams are closed to the harvest of summer steelhead. A treaty has been recently negotiated with the Government of Canada to allocate salmon stocks to the producing country. This treaty when ratified is expected to significantly increase salmon escapement to the Columbia Basin and the South Fork John Day River System. The State of Oregon and the Columbian River Treaty Indian Tribes are working on an allocation agreement which is also expected to increase escapement of anadromous fish stocks.

8. **Status of Diversion Screening and Requirements for Improvements.**

Response – Presently there are no conflicts with anadromous fish out-migration. Ditch diversionswithin the John Day Systems which would also divert anadromous fish art screened. The Oregon Dtpartmtat of Fish and Wildlife Screen Shop at John Day installs and maintains these screens. Many of the irrigation water withdrawals consist of pump intakes which are also screened. The screening of diversions above Izee Falls is included in the Izee Falls passage project.

FY 85 WORK SCHEDULE

Project I, II, and III: South Fork John Day River, Deer Creek, and Izee Falls

Task 1: Prepare and complete environmental assessments per Bureau of Land Management and National Environmental Policy Act required (EIS not required). Completion Date: Projects I and III – April 1, 1985, Project II – February 1986.

Task 2: Preparation of Bureau of Land Management standard contract package for contract blasting of boulder6 and actual boulder placements. Completion Date: June 1, 1985.

Task 3: Execution and inspection of contract for blasting of boulders. Completion Date: July 15, 1985.

Task 4: Execution and inspection of contract for boulder placement. Completion Date: September 30, 1985.

Task 5: Completion of pre-project design and engineering Studies for Izee Falls modification. Completion Date: February 1986.

Project If: Izee Fall6 Fish Passage
Program Measure: 704(E)(I)
Drainage : South Fork John Day River
Location: T. 16s.. R. 27E., **Section 18**

Start Date: April 1.1985
End Date: March 31, 1986

Introduction

Izee Falls is a steep stairstep cascades dropping 50 **vertical feet in about** 80 **linear feet of stream. This block6 upstream passage of adult** summer **steelhead into about 81** miles **of potential spawning and rearing habitat. Providing passage into and screening irrigation diversions in these** 81 **miles would initially increase smolt production in the South Fork system at least** 65% **when fully seeded. This would be further increased with habitat enhancement work planned following barrier modification. It is estimated that summer steelhead smolt production would initially be approximately** 98,200 **smolts/year without habitat enhancement. This would produce an annual benefit of** $232,632. **For the purposes of calculating a cost:benefit ratio (B:C) project life** is **estimated to be** 50 **years. Additionally an annual maintenance cost of** $8,000 **was used. Using these figure6 and discounting annual project benefits at** 4 **percent estimated total benefit6 were calculated to be $5,230,077 with a B:C ratio of 5.4O:l. .**

The project is expected to require tvo years to complete. Pre-project design and engineering studies and preparation of NEPA document6 would take 1 year. Project construction would also take one year and would begin in FY 86. Pre-project design and engineering would be the responsibility of Oregon Department of Fish and Wildlife with the preparation of an Environmental Assessment and associated clearances the responsibility of the BLM. A survey of diversions requiring passage and screening modification will be accomplished jointly by the BLM and ODFW. Construction of screens will be the responslblity of ODFW with funding provided by BPA as included in this proposal.

D.

(i) Coordinated planning of habitat improvement projects within the Fifteenmile Creek drainage is highlighted by a major bank stabilization project undertaken by ODFW, SWCD, SCS and landowners along Fifteenmile Creek in 1974. Approximately three hundred thousand dollars were spent to reduce bank erosion and enhance fish and wildlife habitat along the creek utilizing livestock exclosure fencing and instream habitat improvement structures.

The Oregon Department of Fish and Wildlife and the U.S. Forest Service have worked closely to identify and correct passage barriers and areas of habitat loss on Forest Service lands. All proposals submitted to the PNWPPC for the Hood River and Fifteenmile Creek drainages were formulated jointly with the U.S.F.S. after consultation with the Confederated Tribes of the Warm Springs Reservation.

Salmon Trout Enhancement Project volunteers in cooperation with private landowners have constructed fishways and improved passage over several barriers within the drainage.

Smolt Production Estimates
Fifteenmile Creek Drainage

Stream Section	Existing (smolts/mile)	Potential w/enhancement (smolts/mile)
Fifteenmile (RM 23-33)	0	250
Fifteenmile (RM 33-48)	250	1000
Ramsey Creek	250	500
Eightmile Creek (RM 0-13)	100	250
Eightmile Creek (RM 13-30)	200	500
Fivemile Creek (RM 0-lb)	0	100

(xii) Evaluation of habitat improvement needs throughout the Fifteenmile Creek drainage has been done in close consultation with the USFS and the Warm Springs Confederated Tribes. The USFS, and ODFW have placed the restoration of fishery habitat within the Fifteenmile Creek drainage as a high priority on both public and private lands. Formulation of drainage objectives began with the USFS in 1983 and will be completed when additional information from ongoing stream surveys is available. In addition the SCS, SWCD and private landowners have cooperated in a number of habitat improvement projects since 1974 and will be involved in any future plans.

(xiii)Long term agreements will be negotiated with private landowners to ensure access and maintenance of habitat improvement measures implemented on private lands. Maintenance of cattle exclosure fences will be contracted to private individuals as neede Enhancement practices on public lands will be protected using existing guidelines providing for the maintenance of fish and wildlife habitat.

(xiv) The effectiveness of the proposed habitat improvement measures will be monitored using redd counts set up in index areas some of which are presently being done. Adult escapement will also be evaluated utilizing a trapping facility to formulate a population estimate based on mark and recapture data. Juvenile population estimates will be made to determine population levels' after enhancement practices are completed.

(iv) Project implementation will benefit both wild winter steelhead and resident trout throqhout the drainage. A remnant run of searun cutthroat is thought to utilize the Fifteenmile Creek drainage.

(v) Passage problems in the Fifteenmile drainage are generally confined to the upper reaches of the stream. Water diversion structures and improperly placed culverts make up the bulk of the passage problems. Improvement of these problem sites will aid in full utilization of the suitable habitat above agricultural lands.

The Oregon Department of Fish and Wildlife through the Salmon Trout Enhancement Program eliminated a passage barrier at Seufert Falls in 1984 by constructing a series of weirs to improve passage. Temporary passage improvements were also implemented at water diversion structures located on Fifteenmile and Ramsey creeks in 1984.

(vi) Supplementation of the Fifteenmile Creek drainage with hatchery fish is not a viable option because of the importance of maintaining the genetic integrity of this eastern-most run of wild winter steelhead.

(vii) Limited numbers of these winter steelhead are harvested during the Zone 6 winter gillnet fishery. With the recent construction of a fishway at Seufert Falls the impacts of a subsistence dipnet fishery in this area should be reduced. Cooperative measures to further reduce this subsistence harvest of winter steelhead are